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RATTLER TEST FOR PAVING BRICKS

Effort to Perfect the Appliances and Methods Used — Experiments by National Paving Brick Manufacturers' Association and Professor Edward Orton — Uniformity in Shot as Necessary as in Rattler

Of the several methods of testing bricks which are to be used for street paving purposes only two were recommended for common use by the Organization of City Officials for Standardizing Specifications in the proposed specifications for brick pavements, these being the rattler test and the absorption test; and the majority of engineers have already dropped the other tests, although some still advocate the cross-breaking test.

The absorption test requires no apparatus except accurate scales and an oven for drying the brick. In carrying out the rattler test it was the original idea, or at least the original practice, that almost any foundry rattler might be used for this purpose, although it was, of course, at once evident that the amount, and to some extent the nature, of the "shot" used would play an important part in the result.

It has come to be realized, however, that the matter is not nearly so simple as it at first appeared, one of the difficulties being to prepare standard rattlers, or rather standard plans and specifications for a rattler, so that rattlers constructed after these plans and specifications and operated in a specified way would all produce uniform results with brick of uniform characteristics. Brick, of course, are far from being uniform in any of the characteristics affecting the result of a rattler test, and bricks of the same make, of the same burning even, and tested in the same rattler give considerable variations in results.

This non-uniformity for a long time concealed the fact that these results were affected to a considerable degree by the rattler itself, but the truth and importance of this was gradually forced upon the attention of those who make a business of testing brick, and it became evident that, to insure the obtaining of the desired quality of brick by cities and also to insure justice to the brickmakers, it was necessary that some standard form of rattler should be devised which could be duplicated at any laboratory in such a way as to give uniform results in all laboratories so far as the rattler itself is concerned. And with the rattler is included the "shot" and the method of operating the rattler.

Realizing the importance of the subject to the brickmakers themselves, the National Paving Brick Manufacturers' Association something over a year ago decided to carry out a series of investigations with a view to evolving a satisfactory standard of construction and operation. Prof. Edward Orton, of Columbus, Ohio, who had been one of the most extensive investigators into the subject of brick testing and had been continuously testing brick for a series of years, also realized the importance of such an investigation and early in 1910 offered to cooperate with the association in carrying on a series of tests.

It was finally decided that two series of tests should be carried on simultaneously by Professor Orton at Columbus and Mr. M. W. Blair at Indianapolis, the latter acting for the association. As it was desirable that they should carry on duplicate experiments in absolutely the same way and under as nearly identical conditions and with as nearly the same material as possible, a general understanding or set of rules was drawn up for the carrying on of these tests and experiments. These rules were, in general, as follows:

Each laboratory was to receive bricks in lots of 1,050, the whole 2,100 being from one kiln, and being selected 700 from the upper, 700 from the middle and 700 from the lower levels of the kiln. As soon as received, these brick were to be stored in such a way as to be fully protected from rain and not in contact with a moist or earthen floor; the object being that only air-dry brick should be tested.

For identification bricks were to be designated by key letters, the first letter indicating the plant from which the bricks were received, the second indicating by T, M or L whether the brick was from the top, middle or lower zone of the kiln. Those which were put through an absorption test were designated by the letter W and those which were not by the letter D. Each charge of bricks of a given lot was numbered serially 1, 2, 3, etc. Thus the designation A T W 2 indicated that this lot of bricks was the second to be tested from manufacturer A, that they were from the top of the kiln and had been given an absorption test.

The rattler was charged in three different ways: using cube shot, using spherical shot and using no shot. For either of the first two cases 10 bricks were used to a charge; where there was no shot used 15 bricks made a charge. From the 350 bricks from either zone of each kiln 100 were taken for the absorption test, which test was conducted in an ordinary standard fashion. From this 100 the 20 which stood lowest or highest in the absorption test were separated out for tests 9 and 10, the remaining 80 were divided into eight charges, an effort being made to make all charges equal by having the mean of the absorption records of the brick as nearly as possible the same in each charge. From the 250 bricks which were not given the absorption test 10 charges of 10 each were so arranged as to apportion the irregular and defective bricks equally among the charges, and from the 150 remaining bricks five charges of 15 each were selected in the same way. The remaining 75 bricks were reserved for any duplicate or extra tests which might seem desirable.

The standard specifications of the National Brick Manufacturers' Association provided that the shot charge should con-

sist of 225 pounds of iron cubes $1\frac{1}{2}$ inches on a side and weighing about 0.875 pounds each, together with 75 pounds of iron blocks $2\frac{1}{2}$ by $2\frac{1}{2}$ by $4\frac{1}{2}$ inches, weighing approximately 7.4 pounds each, the shot to be rejected for use when it had lost 10 per cent by wear. It was found that the corners and edges of the cubes wore away very rapidly, making it expensive to replace shot under this specification. Professor Orton demonstrated that the wearing power of the cube was lessened by not more than 2 per cent by the rounding of the corners and edges, this being, he believed, because cubes with sharp edges did not move so rapidly and consequently did not strike so many blows in a given time as those which had become rounded and polished. Discovery of this fact suggested the use of spherical shot, and accordingly, in the investigation herein referred to and which was begun in April of 1910, spherical as well as cubical shot were employed, the same weight, both of individual shot and of the total charge, being used in each case.

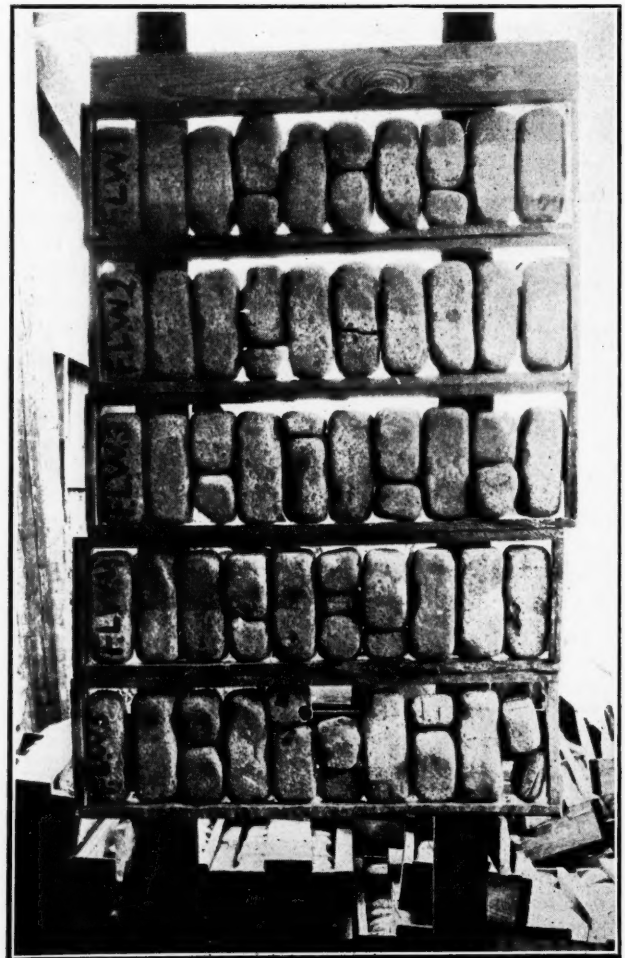
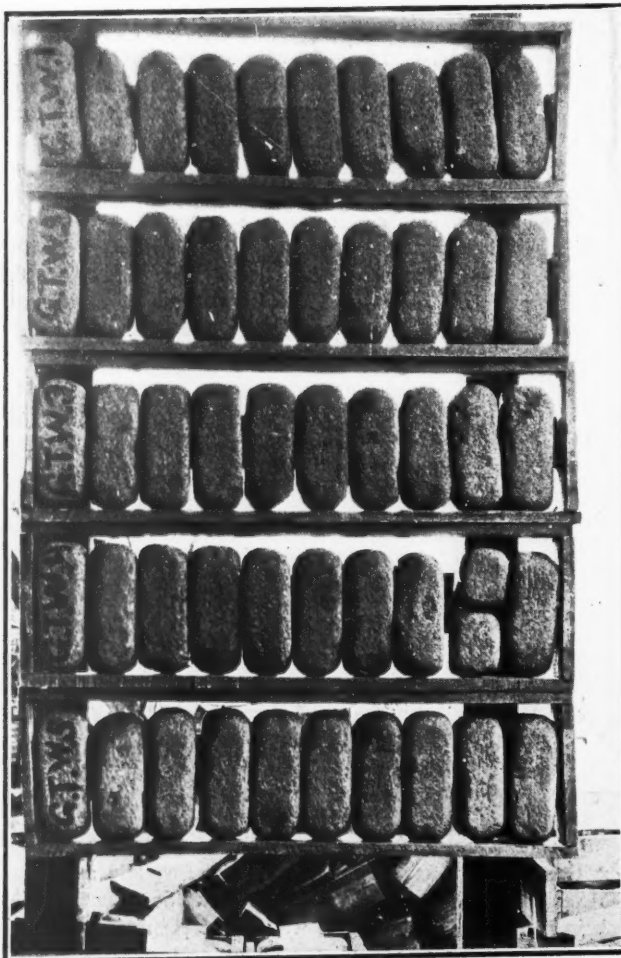
A charge of shot consisted of either cubes with $\frac{1}{4}$ -inch fillets on corners and edges, or of spheres, in each case there being as nearly as possible 75 pounds of larger shot weighing approximately 7.4 pounds each, and also as nearly as possible 300 pounds of smaller shot weighing approximately 0.875 pounds each. After each fifth test each shot was weighed and any of the heavy shot which fell below 6.25 pounds were rejected. The small shot were also rejected by groups whenever a group of the 10 worst shot showed an average weight of less than .75 pound per shot. The above method of rejection applies to cubes and blocks only. In rejecting spheres the diameter of each shot was tested by placing it over a circular hole in a cast-iron plate the diameter of which was 3.56 inches for the large shot and 1.75 inches for the small, those passing through being rejected. Before using in actual tests all shot were given a preliminary wear by revolving in a rattler with any available

bricks until the charge consisted of a mixture of shots which had been given from 27,000 revolutions down by regular gradations to no revolutions, the exact method being prescribed.

The rattler used was the standard rattler which had been prescribed by the National Brick Manufacturers' Association in 1901. After each 50 tests the condition of the staves of the rattler was noted and recorded, and after about 500 tests that of the heads, the object of this being to prepare for framing specifications to provide for the maximum wear permissible before replacement. The rattler was revolved 1,800 times at the rate of 30 revolutions per minute for each test; fluctuations of more than one-half of a revolution either above or below this rate disqualifying the test, speed readings being taken at intervals of not more than 15 minutes.

In weighing the brick at the end of a test, if a brick were found broken, only the two larger fragments of the brick were weighed; no fragment less than one pound being weighed.

On Sept. 19 a report of this investigation was made to the Board of Directors of the N. P. B. M. A., and the same report was laid before the committee on Brick Paving Specifications of the American Society of Municipal Improvements in the month following. At the time of making this report two complete series of tests of 1,050 bricks each had been run by each investigator. An inspection of the report shows that in the first series the average loss with the cube shot was 19.1 in Blair's tests and 17.1 in Orton's; that with the spherical shot the average loss was 16.9 in Blair's test and 20.97 in Orton's, and that where no shot were used the average was 20.9 in Blair's test and 22.33 in Orton's. These figures show that while with the cubes Orton's tests showed a less loss than Blair's, with the spheres they showed a considerable greater loss. The differences between the maximum and minimum losses were: for the cube test, 21.9 per cent of the average loss



SAME ABRASION TEST, DIFFERENT MAKES OF BRICK

Average Absorption: 1, 1.51; 2, 1.47; 3, 1.46; 4, 1.43; 5, 1.41. Abrasion loss: 1, 18.5; 2, 18.2; 3, 18.6; 4, 18.5; 5, 19.4.

Average Absorption: 1, 1.37; 2, 1.33; 3, 1.36; 4, 1.35; 5, 1.39. Abrasion loss: 1, 18.3; 2, 19.6; 3, 18.5; 4, 19.9; 5, 24.9. Little relation between absorption and abrasion results.



NO SHOT USED, BUT FIFTEEN BRICKS

Make of brick same as in right hand figure, page 686. Abrasion loss: 11, 22.0; 12, 22.8; 13, 20.4; 14, 22.2; 15, 19.0. Due to chipping rather than wear

by Blair and 21.04 by Orton; for the sphere test, 27.8 for Blair and 21.53 for Orton, and for the all-brick test, 12.4 by Blair and 8.25 by Orton.

In the second series the losses by the two investigators for the cube, sphere and all-brick tests, respectively, were as follows: Blair 19.05, Orton 17.59; Blair 17.06, Orton 21.34; Blair 22.61, Orton 23.58. These figures show the same discrepancy as in the first series, namely, that whereas Orton's test showed a less loss for the cube test they showed a larger for the sphere test.

As soon as this discrepancy was learned, experiments were stopped for further investigation. The machines used were built as nearly alike as possible, from the same materials, from the same patterns and in the same shop; also, as far as could be learned, all the conditions of conducting the experiments were the same in each case. The shot, however, had been obtained by each testing station from a local foundry, and a comparison showed quite a little difference between the two. Of that used in Indianapolis the scleroscope (an instrument for measuring the hardness of metals by scratching them) gave an index of hardness of the Indianapolis shot of 60.1 for the spheres and 68.7 for the cubes, while in the case of the Columbus shot the index was 72.1 for the spheres and 50.1 for the cubes, showing the cubes to be somewhat harder than the spheres in Indianapolis, while they were very much softer than the spheres in Columbus.

A third series was run, using Columbus shot in both the Columbus and Indianapolis laboratories, with the following results for the cube tests, sphere tests and all-brick tests, respectively: Blair 22.60, Orton 22.49; Blair 24.07, Orton 22.51; Blair 25.16, Orton 26.50. In these tests it is seen that the sphere test gave a slightly greater loss than the cube in each laboratory, apparently demonstrating that the former inconsistency had been due largely, if not entirely, to differences in the shot.

This matter of the iron used in the shot was then gone into quite thoroughly by the investigators. It was apparent that it would be necessary to specify not only the dimensions of the shot, but likewise the characteristics of the metal composing the same. This question the investigators are still studying, apparently having in mind the use of chilled Bessemer or chilled

basic iron. Apparently also the use of spheres rather than cubes is at least considered desirable by them. The investigations are still being continued and it is probable that the shot made from several standard grades of iron will be tested and also an investigation made to determine what grade can be probably obtained with most uniform characteristics from all of the larger foundries of the country.

(To be concluded next week.)

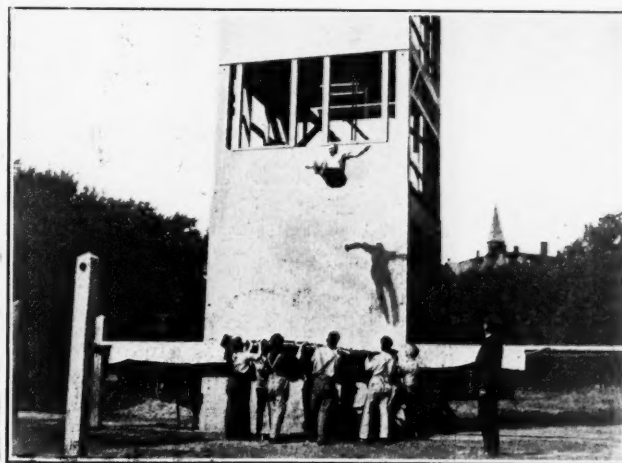
NEW YORK POLICE TELEPHONE SYSTEM

The first formal installation of a telephone system by the New York Police Department was in 1890. In 1891 plans were made for placing the wires underground; also for extending the signal box system in connection with patrol service, which was just coming into use. In 1892 fourteen booths with telephones were established temporarily along Broadway for use during parades, an operator, police surgeon and ambulance being stationed at each. From this time the police telephone system has been extended gradually and systematically. There are now two separate systems, the general police telephone and police patrol telephone. The former consists of 8 switchboards with 28 operating positions. The Police Patrol system was completed in Manhattan in 1905, and extended to the Bronx in 1906, and is now being extended in the boroughs of Brooklyn and Queens. It consists of 40 switchboards, one located in each precinct station house, but not interconnected. There are connected to these 903 police patrol stations. The chief object is to provide means for officers on patrol to communicate with each other and to call for assistance without leaving their posts to use private telephones. Altogether the department uses 3,600 miles of wire in the general and police patrol systems.

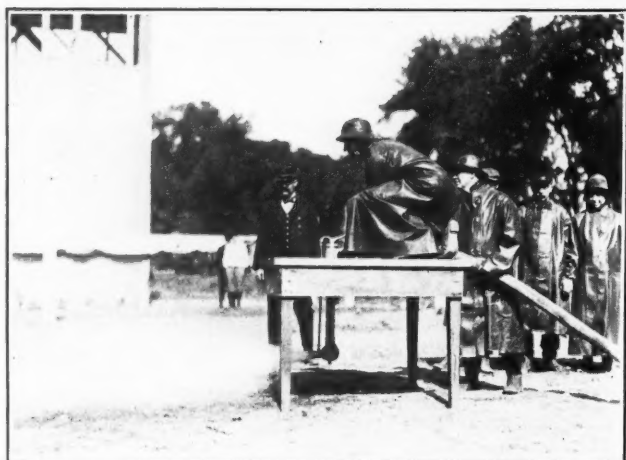
FIREMEN'S DRILL SCHOOL

At Hartford, Conn.—Eighty-foot Drill Tower Used—Practice in Use of Scaling Ladders, Life Net, Life Line Gun and Special Nozzles

ABOUT a year ago the Fire Department of Hartford, Conn., established a drill school, and a few days ago a public exhibition of the firemen was given to demonstrate to the citizens the value of the school. Some time previous to the starting of the school Deputy Chief John C. Moran and Robt. H. Ramsden attended the fire drill schools in New York with the consent of the department of that city. After spending some time in actual service in the New York department these men returned to Hartford, where Deputy Chief Moran was made Drill Master and Mr. Ramsden his assistant. For a time the drill was made possible through the generosity of an envelope works which faced the rear of the truck house and permitted the use of their building for drill work. Shortly after the organization of the school an appropriation of \$2,000 was made for a tower, and drills are now conducted on a tower constructed especially for the purpose, 79 ft. 6 in. high



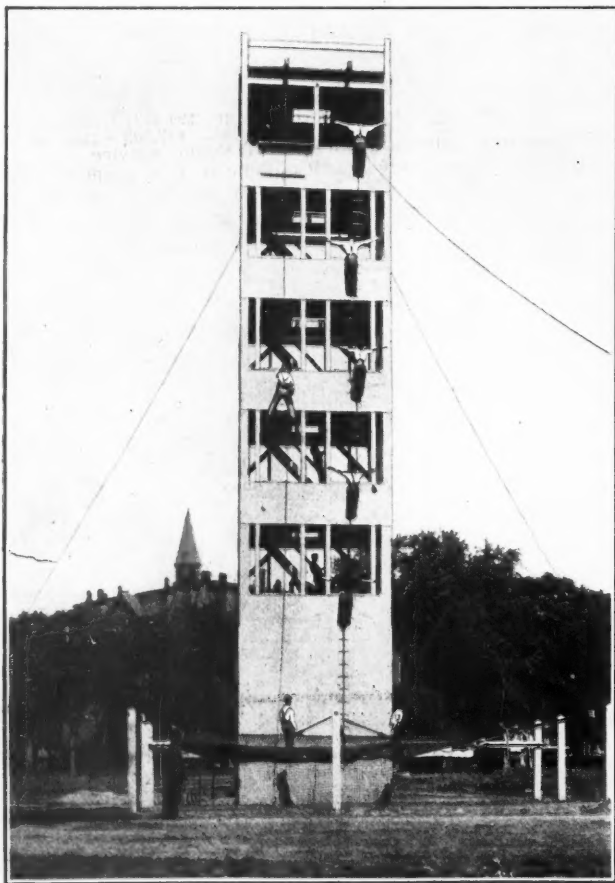
JUMPING INTO LIFE NET.



PRACTICE WITH CELLAR PIPE

and containing seven stories, built with doors and windows, inside staircases and other arrangements for giving practice in actual work with scaling ladders, hose, etc. This building is opposite engine house No. 6.

The men are now put through a thorough drill by the use of this tower. Heretofore they have been drilled by taking only one or two from each company each day; but it is the intention of the department hereafter to drill the men by companies, so that they may learn to work together and appreciate what may be expected of each other when they are working together in actual service at a fire. The men have been taught the use of the scaling ladders and are now able to take a 25-foot single ladder, start at the ground and work up to the top of a seven-story structure unassisted. The ordinary uses of the scaling ladders also are taught by thorough drill. In addition to the use of the ordinary appliances, including the life net, raising 55-foot extension ladders, carrying hose up the building, descending by rope, etc., the men also obtain experience in using the life gun for throwing a rope over buildings, the use of the

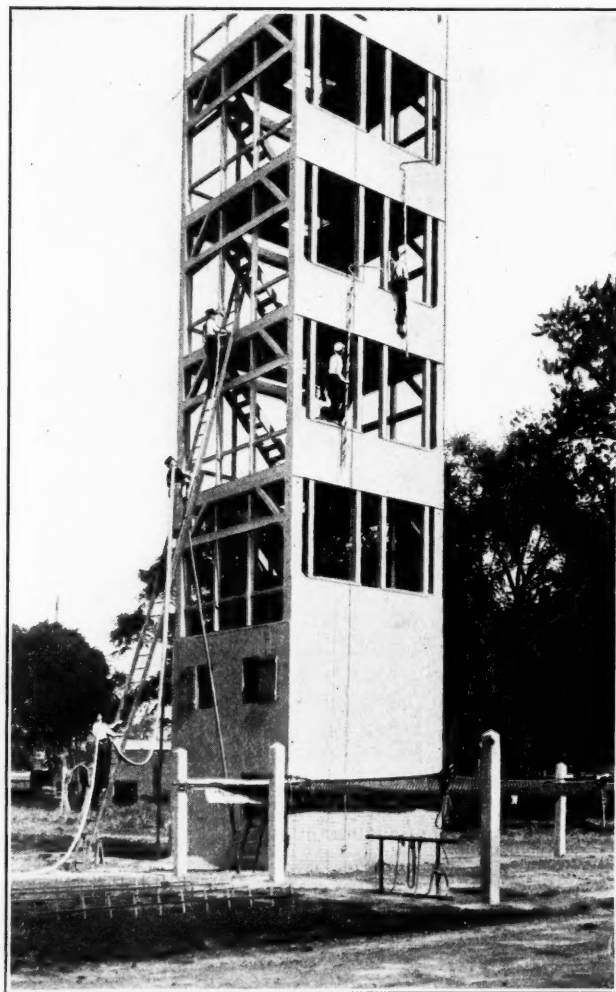


PRACTICE WITH ROPE AND SCALING LADDERS

deluge set and of the cellar pipe. For demonstrating the last named appliance a heavy table has been built to which the cellar pipe is secured. The pipe is connected up to the fire hydrant and the men have an opportunity to observe and obtain practice in its operation.

At the exhibition given a short time ago the program was as follows:

1. Building chain of scaling ladders to top of tower, and taking ladders down.
2. Throwing rope to top of tower by use of life line gun; men to descend singly and in pairs.



PRACTICE WITH SCALING LADDERS AND HOSE

3. Building chain of scaling ladders; men to descend by rope and by ladders.
4. Operating single-handed a 25-foot ladder and taking man down from window.
5. Use of scaling ladder by two men working together in ascending and descending.
6. Use of scaling ladder by one man in ascending and descending.
7. Use of scaling ladder for work with chemical hose line.
8. One man climbing to top floor and lowering another with a rope.
9. Swinging sideways from window to window with scaling ladder.
10. Carrying a man out of window and down chain of scaling ladders.
11. Jumping from window into life net.
12. Raising 55-foot extension ladder and using scaling ladders to reach upper stories.
13. Carrying men out of window and down extension ladder.
14. Taking hose line up 55-foot ladder.
15. Use of deluge set, four lines of hose from one hydrant united into one stream under city pressure.

This very well illustrated the general nature and the special features of the drill through which the men are being put by the use of the drill tower.

For the above facts and for the illustrations we are indebted to Mr. William J. Johnson and the *Hartford Times*.

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Accuracy and Uniformity in Tests

It is becoming more and more common for cities to include in specifications not only rules for conducting construction work, but also definite prescriptions of the characteristics of the materials to be employed. When a material is new or used for a new purpose, and sufficient knowledge is not generally had to enable engineers to prepare specifications, it has been a common practice to substitute a long term guarantee in place of specifications of the material; extreme illustrations of this being found in paving, notably asphalt and to a less extent in wood block and brick. There are many serious objections to such a guarantee, and the present tendency is, fortunately, to greatly shorten its duration or eliminate it altogether.

The substitution of specifications for guarantee began sooner and has proceeded further with brick than with asphalt and some other paving materials, and the credit for this is largely due to the National Paving Brick Manufacturers Association. This association was formed to uphold the credit of brick paving by securing a better product from the kilns, and has for years been working on specifications which would insure the best paving brick and also the most effective methods of laying them. Several years ago it prepared specifications which,

with later modifications, have been generally adopted by most users of paving brick.

For testing the brick the association considers the rattler test (for abrasion and blows) to be the most important; but experience has revealed that in certain respects the apparatus and method of conducting this test are not perfect. Not that the test itself is condemned, but that it is susceptible of improvement—as, indeed, may be said of most tests. This and the investigation being carried on to eliminate the defects are described in this issue. The investigation is being conducted with commendable thoroughness and at considerable expense.

When the rattler and shot have been perfected it is to be hoped that some standard limit or limits of abrasion may be adopted; but especially a uniformity range, since uniformity is even more important than toughness and hardness; a pavement of bricks uniformly soft giving more satisfactory and even longer service than one of bricks averaging harder but with less uniformity.

Annual Reports

Possibly a majority of cities end their fiscal year between now and spring, and during the next few months the several departments will begin the preparation of their annual reports. We wish we could impress upon those entrusted with the duty of preparing these reports the importance of this work. It should not be looked upon as a mere side issue of little importance, since such reports are (or would be if properly prepared and promptly issued) of value to the citizens. Moreover it is the official's duty, as it is the citizens' right, that the latter be accurately informed concerning the work of departments.

Too many reports appear to have some aim other than the information of the average citizen. The average citizen can not or will not read through a lengthy report of commonplace details; he is not interested in an inventory of the number of shovels, wheelbarrows, etc., in the possession of the Department of Public Works, nor the exact location of every curb grade given by the engineer.

In our opinion the official's statement should be given in a popular way, with little in the nature of statistics. Such details as are referred to above are facts which it is the right of the citizen to know, of course, and they should be readily accessible; but the average citizen would only be appalled by the appearance of pages of such tables in the report. What he would appreciate, in our opinion, is a concise, clear, frank and full statement, giving all the essential facts, and these only.

Jacksonville Light and Water Works Plants

THE report of the municipal lighting and water works plants of Jacksonville, Fla., for the first nine months of 1910 show an excellent financial condition. The former plant has cost, to date, \$699,905.70, of which the city furnished \$171,544.84, and the surplus earned and reserve for depreciation totaled \$1,141,362.63. The accounts receivable and cash totaled \$161,085.22, while the accounts and wages payable totaled only \$12,282.62. The gross earnings for the nine months were \$276,421.33, and the operating expenses \$99,258.96; while \$67,425.12 was spent on construction, extensions, etc. Allowing 20 per cent of total cost for interest and depreciation, there would appear to remain a comfortable balance of net profit.

The water works have cost \$642,531.39, of which \$445,000 has been furnished by the city. The surplus earned and reserve for depreciation totaled \$592,940.54. Cash and amounts receivable totaled \$39,824.01, while the accounts and wages payable totaled \$5,080.54. The gross earnings were \$101,937.42 and the operating expenses \$33,766.82. There was spent for construction, extensions, etc., \$39,926.27. Allowing 12 per cent of total cost for interest and depreciation, it would appear that there was a deficit of about \$9,000. (This is a pumping plant, and interest rates are higher than in New York, hence the 12 per cent.) There would be, however, about \$28,000 as a net profit from the combined plants. Altogether they have turned into the city treasury \$843,130.16.

EFFICIENCY RECORDS OF DETECTIVES

Inadequate or Entirely Wanting in American Departments—
Basis for Promotions—Minneapolis System Recommended—Credits on Daily Records

By LEONHARD FELIX FULD, LL.M., Ph.D., Examiner, New York Municipal Civil Service Commission

STUDENTS of American police administration have for many years criticized the want of proper efficiency records in our police departments. In most police departments no efficiency records whatever are kept and those few departments which keep efficiency records record only extraordinary police action for which special recognition has been given by the head of department because of the personal risk involved in its performance and penalties inflicted for official misconduct or for a violation of the rules and regulations of the department, after a trial before a disciplinary authority. The inadequacy of such efficiency records which note only extraordinary events in the official life of the policeman and do not attempt to keep a record of the officer's daily performance of routine duty is apparent to all, but as far as the writer is aware no attempt has been made to remedy this defect in the uniformed police forces of this country.

The lack of such efficiency records in the case of the uniformed force is felt particularly when promotions are to be made. The civil service commissions which conduct civil service examinations would be glad to incorporate into their scheme of examination any proper efficiency records which may be kept by the police departments. Furthermore, the head of department, when called upon to make promotions, would like to consult an efficiency record of the men who are candidates for promotion before making appointments to superior positions in the department. The head of department is frequently a commissioner who has been in office for a comparatively short period of time; he is generally not personally acquainted with the relative efficiency of the men in his department and in every case he would, if he is himself conscientious, like to consult efficiency records of his men, which have been contemporaneously and carefully kept.

However great the need of efficiency records may be in the case of the uniformed police, who have routine duties to perform, the need of such records for the purpose of maintaining the efficiency of the detective force is almost so great as to render their installation indispensable. Detectives have less routine duties to perform; they perform their duties even less under the supervision of their superior officers than uniformed policemen; and the universality of the complaint that many members of our American detective forces are lazy and shirk their official duties would seem to indicate that the absence of efficiency records has in practice the bad results which we would expect to find from a theoretical consideration.

In the city of Washington, in the District of Columbia, the efficiency of the detective force is maintained in the following manner: Detective sergeants are detailed from time to time from the privates of the uniformed force; such a detail being considered a recognition of extra-meritorious work performed while in the uniformed service. If the department fails to realize from these men so detailed upon their being assigned to the detective branch of the service they are again relegated to the ranks. Monthly reports are made by the chief of detectives to the superintendent of police, wherein he gives the number of arrests made by each individual detective, the number of cases held by the courts, the number of cases dismissed, the number of cases *nolle prosequi*, the number of cases pending, the estimated value of the property recovered by each individual detective and the total value of the property recovered during that period. In other words, each man in the service must stand on his own merits and his capacity to do good detective work. There are no special blank forms for these reports as they require only a single communication once a month.

For a city which is so fortunate as to have for its superintendent of police a man of such great experience, ability and

efficiency as Superintendent Sylvester of Washington this system undoubtedly works very well in practice. The monthly report from the chief of detectives will show to the conscientious and experienced chief of police whether the detectives have done reasonably good work or whether they have shirked their duties. In a case in which the head of the police department, however, is not as experienced as is Superintendent Sylvester, or where the efficiency records are to be used in connection with civil service examinations for promotion, the system devised by Superintendent Frank T. Corrison of Minneapolis is to be strongly recommended.

In Minneapolis each detective is required to render a daily report and these reports are tabulated on a large card which is kept on file at police headquarters. Each detective has his own card. This card has numbers from 1 to 31 along the left-hand margin, thus allowing one line for the entries of each day of the month. Along the top of the card are the following column headings: Property recovered, drunks, vagrants, pickups arrested, vagrants, pickpockets, etc., with criminal records arrested, other prisoners arrested, prisoners fined and sentence suspended, prisoners held for grand jury, prisoners sentenced to city workhouse or county jail, prisoners sentenced to state reformatory, prisoners sentenced to penitentiary, fugitives arrested, letters and telegrams investigated, special duty, remarks.

A fixed number of points is allowed for each kind of service performed by the detective. One point is allowed for the arrest of drunks and vagrants. As a general rule detectives are not expected to arrest such offenders, but circumstances obligate them to make such arrests at times and therefore one point is allowed for such an arrest. Nothing, however, is allowed for the final disposition of these cases since there is no detective work involved therein. Such arrests are made by detectives at times in Minneapolis because of the fact that plain-clothes men perform reserve duty. When detectives arrest vagrants or pickpockets with criminal records they are allowed three points for each arrest. For the arrest of any other prisoners only a single point is allowed, but additional credit is given for the final disposition of such cases.

When prisoners are fined or sentence is suspended two points of credit are allowed, because these are generally cases of small importance. When the detective presents sufficient evidence to the magistrate to warrant him in holding the prisoner for the grand jury the detective receives five points of additional credit. If the prisoner is sentenced to the city workhouse or county jail the detective receives five points of credit. Ten points of additional credit are given to the detective when a prisoner is sentenced to the penitentiary or the reformatory. Men under thirty years of age convicted of a first offence are usually sent to the reformatory and they can be transferred to the penitentiary at the discretion of the board of control. The work of the detective would be the same in the case of a conviction to the reformatory as in the case of a conviction to the penitentiary, it being entirely a matter for the court to decide to which institution a given criminal is to be sent.

For the arrest of a fugitive wanted by the police of another city the detective receives five points of credit and one point of credit is allowed for the investigation of a letter or a telegram. One point is also allowed for special duty on occasions when a detective may be detailed to attend some wedding where valuables are on display or to some other place of a like character. Furthermore, one point is allowed for the recovery of each \$200 of stolen property.

The general plan of Superintendent Corrison's system of marking is to give credit for securing and presenting the facts of a criminal case to the court and carrying the case to a successful completion. The amount of the credit depends upon the importance of the work performed by the detective. The total number of points earned by each detective is made known to the members of the detective force and serves to stimulate them to added efforts.

Superintendent Corrison's plan is one which is to be strongly commended to the careful consideration of American chiefs of police. It is likely also that it can be adapted for use in connection with the uniformed police forces of American cities.

PAVEMENT GUARANTEES

IN response to our request that the specifications proposed by committees of the American Society of Municipal Improvements for adoption as standards be discussed quite fully before their final adoption by the society and cities generally, the following comments on the asphalt pavement specifications, published in the issue of November 2, have been received from Mr. George C. Warren:

I wish to comment on the portion of the specifications under the heading "Condition at Expiration of Guarantee." The provisions therein given are, at least some of them, both impractical of accomplishment and dangerous in their effect on the legality of contracts and assessments. In formulating specifications for pavement guarantees it is important that the fact be constantly borne in mind that if the requirements are such as to constitute a maintenance of the pavement, such requirements at least endanger the legality of the contracts themselves as well as of the assessments, which in most cases follow the contracts; for the reason that in many, if not most cities, the charter requires that repairs to pavement shall be made and paid for out of the general funds of the city and not by assessment on the abutting property. The moment we depart from this rule and provide anything along the line of maintenance—that is, anything which, under the conditions of construction or traffic to which the pavement is subjected, it is not possible to maintain without repairs—that moment we get into serious difficulty over the legality of the contracts and assessments.

In consideration of the work to be done under a guarantee, and the fair reasonable requirements of the guarantee, it is essential that no effort be made to hold the contractors responsible for defects caused by conditions beyond the control of the contractor; such, for instance, as the back filling of trenches, insufficient subdrainage, and crowns and proper cleaning and flushing of the streets. Consideration and differentiation should also be made in relation to the volume of traffic per foot of width and length of term of guarantee, and the climate conditions to which the pavement is subjected, remembering always that the guarantee should not attempt to hold the contractor responsible for anything more than the employment of first-class materials and workmanship. The moment you go beyond that you endanger the legality of your contracts and assessments, to say nothing of the unfairness to the contractor of holding him responsible for the matters out of his control, whether through the neglect or errors of the city or otherwise.

The specifications provide that the grade shall "conform substantially to the original grade." This, it seems to me, is too indefinite to be practical. Is a distortion or depression of a quarter of an inch from the established grade substantial conformity to the original grade? Or, if the grade is within an inch of the original grade would that "conform substantially" to the original grade? In my judgment, this point of uniformity of grade, after a pavement has been subjected to several years' use, cannot be fairly stated other than in terms of depth of water standing in the depressions, and my suggestion would be that if on any portion of the street water stands to a depth of more than three-eighths of an inch the surface should be regulated, and that if the pavement during or at the expiration of the guarantee complies with that requirement it is all that could reasonably be expected under a guarantee.

The specifications provide that there shall be no cracks more than 3 ft. in length. I believe it is fair to say that there has never been any asphalt pavement laid which has been subjected to sudden changes of temperature, especially in cold climates, in which no cracks have appeared after a term of years to a greater extent than 3 ft. in length. If that is a fact, then it is improper to put any such requirement in a specification.

The specifications further provide that the surface shall not "contain any disintegrated surface mixture." That, it seems to me, is entirely too broad to be practical. Every pavement of every kind will, after a term of several years' use, have more or less of its surface which is more or less disintegrated, and still the pavement may be in excellent condition.

The specifications further provide that the asphalt pavement "shall not have been reduced in thickness more than $\frac{1}{4}$ in. in any part." This requirement I believe to be absolutely unreasonable and impractical for any conditions of traffic. Aside from this, the specifications do not differentiate as to the time of use or the conditions of traffic. Surely it is unreasonable to expect that any pavement subjected to moderate traffic, say for five years, should not lose by abrasion alone more than $\frac{1}{4}$ in. in thickness in the line of traffic; even if the wear has not been increased through excessive flushing, watering or through lack of cleanliness or other carelessness on the part of the city.

The next provision is that the foundation shall be free from

cracks. It is fair to say that if there are any cracks in the concrete foundation of an asphalt or other pavement they occur either from the fact that a monolithic hydraulic cement concrete will necessarily crack under some conditions, or from settlement of trenches, or from the inherent fact that under certain conditions of exposure, subsoil, subdrainage, or otherwise beyond the contractor's control, the foundation will crack to some extent. That being so, why should the contractor be held responsible and required to make repairs to such cracked foundation? If the test of condition of pavement at the end of the guarantee period were, "Would the city at its own expense make repairs at this time?"—which is surely a fair test of what the contractor should be required to do under a guarantee—I believe it is fair to say that any such provision as referred to above would never be put in the guarantee specifications for an asphalt or other pavement. I believe that it is absolutely unfair to the contractor and frequently illegal to provide in any pavement guarantee anything more than a requirement that "The contractor shall use such material and so construct the pavement that it will be and remain in good repair and condition for and during a period of five years from the date the roadway is completed and opened for traffic over its entire length, so that at the end of said period the pavement shall be in good serviceable condition and free from any defects which shall impair its usefulness as a roadway, ordinary wear and tear excepted, and also excepting such portions of such pavement, the finished conditions of which shall have been altered or interfered with by permits of the city or by other causes not controlled by the contractor."

When the contractor furnishes to the city a pavement which during the guarantee period has sustained the traffic and is still in good serviceable condition, without holes, cracks, or other defects which "impair its usefulness as a roadway," then he is complying with all reasonable requirements of a guarantee period, and, as before stated, if an attempt is made to require more than this there is great danger of making contracts and assessments invalid.

We should at this time give very serious consideration to the question whether any guarantee of the contractor, beyond a term of, say, a year or eighteen months (which is ample to prove the integrity of construction and to correct any errors of construction), is to the interest of municipalities. I am one of the many who, having given this matter careful consideration, believe that the interest of the municipalities is best served if they rely less on guarantees and more on common sense and the efficiency of their engineering departments. Why should a city require a guarantee of a pavement any more than it requires a guarantee of a bridge? Why should not the city in the construction of a pavement do precisely what it does in the construction of a bridge, or, as far as I know, every other form of construction?—that is, determine for itself, after consultation with the best consulting engineers available, the form of construction which is best adapted for the particular conditions in each case, and then specify the best materials available, award the contract to parties who are believed to be responsible, give the work close scrutiny and expert inspection, including laboratory examination of materials used. Then, having done all of these things, let the city take the responsibility of the results and not attempt to throw the responsibility on the contractor under guarantee, guarantee bonds, cash retainers, and other more or less mythical and misleadingly attractive guarantee provisions, all of which necessarily increase the cost of the work to the city, in addition to a greater or less chance of endangering the legality of the contract. I believe that, under such a system of selecting the best, both as to materials and contractor, and then subjecting the work to the most intelligent and practical inspection possible, the results will be not only pavements at lower cost, but better workmanship. Beyond all, you cannot reasonably expect, as the specifications herein referred to attempt to provide, that at the expiration of a term of years, regardless of climate and regardless of traffic, you will have a pavement which is in every respect as good, as thick, as free from cracks, as sound and of the same accuracy of grade as when originally constructed. In adopting such specifications you are adopting the impracticable and when you adopt the impracticable you are getting into all sorts of trouble.

If it is said that city engineers frequently have not the experience and are not equipped with the laboratory necessary for technical inspection of construction of asphalt pavements, my reply is that neither is every city engineer sufficiently versed in the construction of bridges, reservoirs, filter plants, or the many other specialties of engineering construction, but that does not cause the city to require that the contractors for such construction shall give guarantee for a term of years; but the city does what every city should do, have its engineer formulate the general plans, then call in a consulting engineer, and they together provide the details of construction and inspection and the city takes the responsibility. There are enough experts in pavement construction of all kinds with

well-equipped laboratories so that no city needs to go to great expense, or adopt a generally quite unsatisfactory condition surrounding a guarantee, because they are not equipped with the laboratory or technical experience. Such consulting experts can be engaged by any city just as consulting engineers are engaged in other engineering specialties.

WATER PURIFICATION AT BANGOR, ME.

By Rapid Sand Filters—Increasing Efficiency of Sedimentation Basins—Clay and Whiting in Place of Lime
—Automatic Feeding—Hypochlorite

THE Water Board of the city of Bangor, Me., during the municipal year of 1909-10 engaged Professor James M. Caird, of Troy, N. Y., to take charge of the chemical analyses and operation of the filter plant operated by it, and his report and that of the board give considerable information concerning the operation of the plant and some novel features introduced to meet unusual conditions.

The water supply is obtained from the Penobscot River, the same river also furnishing power for operating the plant. Drainage of farms, sewage from small localities and waste water from pulp mills reach this river in considerable quantities. The composition of the water is rather peculiar for a river, in that it is always highly colored and contains little or no turbidity. The average bacteria per c.c. during the fiscal year was 1,725, and 61.9 per cent of the one-c.c. samples examined gave positive presumptive tests for *B. coli communis*. Under the supervision of the chemist in charge a complete sanitary examination of the water was made once a week and a mineral analysis once a month.



BANGOR DAM AND PUMPING STATION

The water is delivered by low-duty pumps to sedimentation basins, having first been treated with chemical coagulants, and then passes by gravity to the filters and from these to the clear-water well, from which it is delivered to the consumers by high-duty pumps. Sulphate of alumina and lime are used as coagulants. There are two coagulation basins with a combined capacity of 1,500,000 gallons. By tests made by adding salt to the water it was found that, although 5,000,000 gallons per day was passing through the basins, it required but $2\frac{1}{4}$ hours for the salt to do so; in other words, the full area of the basins was not receiving a uniform flow of water. This is especially important in winter as, with a low temperature, coagulation forms slowly and in extremely fine particles, and a longer period of coagulation is then desirable, as it would produce better results, give a longer period between washings and require a less amount of wash water. Professor Caird recommends the use of baffles in the coagulation basins to increase the length of time required by the water to pass through them.

Difficulty was experienced during the year in obtaining a uniform sulphate of alumina. That received contained alumina

varying in amounts from 14.20 to 18.60 parts per hundred, while good sulphate of alumina should contain not less than 17½ parts. The iron (Fe_2O_3) varied from 0.50 to 4.89 parts per hundred, while this amount should not exceed 0.40 part. The acid contents, which should not exceed more than 37½ per cent, varied from 37.75 to 41.46.

The use of clay for making up deficiencies in alkalinity was tried, and while it was found that the clay produced an alkalinity, it was impossible to get the aluminum hydrate in such form that it would be retained by the filters, the clay apparently being of no assistance in securing this result.

Whiting was used part of the time to make up the deficiency in alkalinity, and with partial success. It was found that one grain per gallon increased the alkalinity 11 parts per million. The use of whiting is more desirable than of lime or soda ash, as it does not tend to "set" the color. It was found that with an increase in the amount of whiting used the color of the filtrate did not increase, and that very small amounts increased the alkalinity of the effluent. Experiments with its use were so satisfactory that the plant was operated using whiting in place of lime. Operating the plant using sulphate of alumina at the rate of 1.50 grains per gallon and whiting at the rate of 0.25 grain per gallon, the color was reduced 58 per cent and the filtered water contained three parts per million of alkalinity. Owing to the difficulty in obtaining the whiting, however, its use had to be discontinued.

Previous to October the sulphate of alumina was applied by gravity, but owing to the changes of rate in the pump with the varying head, this required almost constant attention of an operator to adjust the amount used. If the operator did not happen to be present when the tide changed, too little or too much coagulant was applied, consequently the efficiency of the plant changed. To overcome this trouble an automatic feeding device was introduced by the New York Continental Jewell Filtration Company, and became operative in October. This device consists of a turbine in the supply main operating a balanced four-way valve, which throws very little load upon the turbine shaft. The balanced four-way valve admits water from the high-pressure line to a pump which discharges the proper amount of coagulant to the unfiltered water. This pump is so arranged that the amount of coagulant applied can be easily regulated without changing the strength of the solutions. This device was tested with the water passing through the supply main at from 1.28 to 4.26 feet per second, and was found to apply the coagulant at a uniform rate under this range of velocity.

The filter plant consists of twenty-four Warren filters, each 10 feet 6 inches inside diameter, having a combined sand area of about $\frac{1}{21}$ of an acre. The depth of the sand in the filters is about 24 inches. Owing to the small capacity of the clear-water well it is necessary to operate the filters at times at a very high rate, sometimes as high as 7,000,000 gallons per day. Owing to this irregular and occasionally high rate of operation, to certain peculiarities of the water and to the fact that during part of the time the character of the sand used was not of the best, 8.69 per cent of the water filtered was used in washing the filters, which is unusually high.

Commencing with February 21 of this year, hypochlorite of lime has been used in connection with the operation of the plant. While this method had not been used a sufficient length of time before the making of the report to give any great amount of data, it was found that bacterial efficiency was greatly improved, the color removal was greater, and it was possible to reduce the amount of sulphate of alumina used one-fourth of a grain per gallon, and the use of lime for making up the deficiency in alkalinity has been obviated.

During November and December the sand was removed from the filters and the tanks cleaned. The perforated copper plates in the 18 filters which were first installed were found to be worn quite thin by the action of the rakes in the sand during washing. Several were found to contain holes or cracks, and were replaced with new ones.

NEWS OF THE MUNICIPALITIES

Current Subjects of General Interest, Under Consideration by City Councils and Department Heads—Streets, Water Works, Lighting and Sanitary Matters—Fire and Police Items—Government and Finance

ROADS AND PAVEMENTS

Uniform Cement Walks for Boston

Boston, Mass.—A bill compelling property owners to join with the city in the building of granolithic sidewalks will be presented to the next Legislature by Mayor John F. Fitzgerald. He will also ask the Chamber of Commerce and other organizations to join in the effort to have uniform sidewalks. He says that many of the walks in the city are a disgrace and he feels that property owners will not improve them unless compelled to do so. Under existing conditions at City Hall property owners are obliged to pay approximately 50 per cent of the cost, and because of that cost many of the property owners have preferred brick, which is more reasonable.

Boys Employed Pouring Tar

East Chicago, Ill.—A contractor for brick paving is employing boys between the ages of 14 and 16 for pouring tar in the joints of the bricks. The boys are mostly the sons of foreigners who work in the steel mills. The law prohibits boys under 16 from working in mills, but does not forbid their employment in outdoor work. The cans of tar are not heavy and the work is easy, as there is much waiting for hot tar. The boys get \$1.10 a day and do as much work as men.

Paving Brick Famine

Peoria, Ill.—For the first time in the history of Peoria paving brick is being obtained from a plant outside of the State. During the past year there has been a veritable paving brick famine and it still continues. For this condition of affairs the strike at the Purington plant at Galesburg was largely due owing to the fact that being unable to obtain their supplies at that point, one of the largest paving brick centers in the United States, the contractors were compelled to go elsewhere and the total output of the plants at Alton and Streator were speedily engaged. When A. D. Thompson came to pave South Garfield avenue he was obliged to go to Clinton, Ind., for his material, and it is being laid this week. California avenue is being paved with Alton brick by D. A. Myers, while the material for the paving of Washington street is coming from Streator and is taking the entire output of the plant there. James Allen was compelled to decline a contract on which he was the lowest bidder because he could not get the brick.

Sand Will Be Tried on Hill Pavements

Tacoma, Wash.—Sharp sand will be sprinkled on two stretches of hill pavements over which heavy team traffic passes, as an experiment to determine some means of reducing the number of accidents to draught horses that mark every rainy season in Tacoma. Jefferson avenue, between Pacific avenue and C street and Baker street, will be sanded under the direction of Commissioner of Public Works Owen Woods and if the sand proves efficacious its use will likely be extended generally to hill pavements during wet weather. Members of the Tacoma Humane Society, team owners and Commissioner Woods met in the Council chamber at the City Hall to consider the slippery pavement problem. Last Winter hundreds of valuable draught horses were injured and many of them permanently disabled as a result of the uncertain footing they encountered while hauling heavy loads up Tacoma's hills. Paving materials were given some discussion, but it was the opinion of the meeting that good sharp sand, sprinkled regularly, would be the best aid, and to determine the point, George Scofield, of Savage, Scofield & Company, and Calvin Barlow, of the Tacoma Trading Company, offered to furnish sand for experimenting on the Jefferson avenue and Baker street stretches. Humane Officer W. S. Van Voris exhibited specimens of chain horseshoe protectors, which he said were used in many cities to aid horses in climbing hills. Most of the team owners at the meeting

inclined to a belief that the protectors would do the horses' hoofs more harm than the assistance they would give the animal, and would be of little use at all to horses wearing wide calks. It was suggested that the Municipal Commission be asked to pass an ordinance assessing a fine of \$5 against every teamster who sets brakes so that the wheels of his wagon slide while descending a hill.

Build Over 14 Miles of Sidewalk

Superior, Wis.—More cement sidewalk has been laid in Superior during the past season than in any previous year, according to Henry Beglinger, Secretary of the Board of Public Works. Since construction work was started this Spring 14.71 miles of the cement walk has been laid and in addition 3 miles of wooden sidewalk. The cement walk was laid in all parts of the city with the exception of the Tenth Ward, where the wooden walk was laid.

SEWERAGE AND SANITATION

Contract Is Let for Hurry Job

Chicago, Ill.—Contracts were let November 2 by the city for what is declared will be the fastest job of street improvement ever carried through in Chicago. The work was started the next morning, the first voucher was issued at noon, it was completed in the afternoon and the final voucher turned over to the contractor before the offices of the Board of Local Improvements closed at 5 p. m. The job was the laying of a 12-inch sewer in Humboldt avenue for the two blocks, between North Forty-third and North Forty-fourth avenues, a distance of 680 feet. It had to be completed so that pavers can start in the street at once.

Causes of Typhoid in New York

New York, N. Y.—Commissioner Ernst J. Lederle, of the Department of Health, gave out last week statistics of typhoid fever in this city as the result of an investigation of cases in the Ninth and Nineteenth Wards. In the Ninth Ward the investigation covered six weeks, beginning July 26. In that time 88 cases were reported. The normal average for the district for the five years from 1905 to 1909 was 31. Of the cases investigated four were due to out-of-town infection. There were two cases each in six families and four of these were due to direct exposure. In the Nineteenth Ward the six-week period of investigation began on September 3, 1910. Fifty-six families were infected. In these cases 17 were due to out-of-town infection, four cases to impure water, 19 to artificial ice, 15 to natural ice and two to raw oysters.

Fear Sewer Explosions

Omaha, Neb.—A week or so ago an explosion occurred in one of the city sewers, blowing out the manhole and tearing up a small section of street and pavement. Immediately the City Engineer, George W. Craig, commenced an investigation and now makes the statement that a greater part of the business portion of the city stands over a magazine that is liable to explode on the least provocation. The explosive against which the engineer warns is gasoline, the latent power of which, he says, could cause more damage than a mine of dynamite covering the same area. The situation, he adds, calls for drastic and immediate action. The bulk of this explosive gas, says Engineer Craig, is generated from gasoline dumped into the sewers by the dry cleaning establishments, with a considerable waste from the garages, where large numbers of automobiles are housed. So serious is the situation that Mr. Craig declares he will not send men into any sewers that receive the waste from dry cleaning establishments and garages, as he fears the smallest spark will cause an explosion that would kill many persons and destroy hundreds of dollars' worth of property. The engineer declares that the situation is no worse here than in other cities, and adds unless some concerted action is taken soon from all over the country, will come reports of great damage done by sewer explosions.

Markers for Sewer Connections

Binghamton, N. Y.—City Engineer John A. Giles and Chief Sanitary Inspector John Hanley have evolved a plan whereby the excessive cost to the city of searching for missing sewer connections will be eliminated in the future. Every year a considerable sum is expended by the city in seeking lot connections. The lot owner has paid for the connection in his sewer assessment and if, when he attempts to use the sewer, he finds that the connection is missing he does not search far, but applies to the city. Often it occurs that by excavating a foot or so either way the missing connection would have been discovered, but the city is called in and must stand the expense. Again it has been known in years past that unscrupulous contractors have purposely skipped sewer connections to increase profits and later the city has been obliged to install them at its own expense. Under the proposed plan a marker similar to that used for water connections will be placed in front of every lot where the house is not connected with the sewer when the sewer is built. This marker, which will cost in the neighborhood of \$1.50, will be of iron and will be charged up in the sewer tax against the lot owner. When the time arrives to connect with the sewer the marker is returned to the city and the owner reimbursed for the amount paid by him, the marker being used again in some other part of the municipality. In this manner it will be possible to operate the sewer system with 200 markers, as all would be kept in constant use and at the same time the expense of searching for lost sewer connections would be eliminated.

Expensive Creek Diversion

Toledo, O.—One hundred and twenty-five members of the Chamber of Commerce, gathered in the large dining room of the Boody House last week, listened to the discussion of the elimination of Swan Creek by Service Director J. R. Cowell and James Staunton, member of Council. Service Director Cowell placed the cost of the creek elimination at \$2,070,000, based upon figures supplied some time ago by the chief engineer's department. Eleven items of cost are cited in this estimate, which Mr. Cowell read. The plan suggested was the diversion of the creek outside the city line, running it into Delaware Creek and thence into the river. The 13 sewers now being emptied into Swan Creek would be intercepted and emptied into the big sewer in Monroe street.

Why St. Paul Is Healthiest City

St. Paul, Minn.—Dr. G. A. Renz, City Health Commissioner, in explaining why, according to the report of the United States Census Bureau, St. Paul is the healthiest city of its class in the nation, says it is due to a perfect sewerage system and the purity of its water supply. His statement follows:

The figures given out by C. L. Wilbur, Chief Statistician of the Bureau of Vital Statistics of the United States Census Bureau for cities in the 100,000 class, although St. Paul and several of the others have populations of more than 200,000, are of unusual interest. They prove the contention of experts that good sewerage and pure water are the main factors to the hygienic welfare of a city.

St. Paul is particularly fortunate in the ease with which sewers may be built. Not the least contributing factor that makes St. Paul, with its death rate of 11.4 deaths to every thousand inhabitants, is the underlying plateau of soft and chalky sandstone which makes possible the cheap and easy construction of adequate sewerage drains. Due to the fact that the pick works easily in the sandstone, the largest and very best sewerage drains can be constructed at the minimum of cost. A sanitary sewerage system undoubtedly is one of the first considerations looking toward the health of a city. Many of our sewers are so large that you can drive a horse and wagon through them. The cheapness of these sewers means that we can have many of them. Their size assures the easy handling of all waste and refuse.

We have in St. Paul practically no typhoid fever. Occasionally there is a case, but we usually find that it has either been imported from some other place or has been the result of drinking water from wells. Our water comes from springs that, having been tested, are known to be pure.

St. Paul's high altitude, its rarified air, which results therefrom, contribute materially to the health of the city. The playgrounds, parks, bathing places, in fact all the provisions for recreation, add in a measure to the health of our city.

Sewer Work Will Continue During Winter

Syracuse, N. Y.—That the intercepting sewer will be practically completed by next November was the prediction made last week by Chief Engineer Glen D. Holmes after a meeting of the Intercepting Sewer Board. The largest and deepest sections have been finished, and the sewer is in use from West Belden avenue north. One-quarter of the work, measured by the cost, is done. The work will be continued through the winter by Contractor William Fitzgerald. The winter work will be largely in the tunnel section, principally that under the New York Central Railroad tracks in West Washington street at South Franklin. The construction there, Engineer Holmes said, will in no way interfere with the operation of trains, and the bottom of the sewer will be about 30 feet under the tracks. The tunneling will be done in the section between West Water and West Fayette streets through South Franklin. The excavation will be carried on from both ends. It is expected that it will be easily completed before spring and will be practically the last of the tunneling operations.

Plan to Kill House Flies

Worcester, Mass.—A plan to kill off the house fly, that bearer of germs and special dispenser of typhoid fever, is advanced by Prof. Clifton D. Hodge, biologist at Clark University, Worcester, as follows:

My idea is to have a fly-trap attached to garbage-can covers. In my trap I have the cover of the can purposely made loose and too large by about an inch all around. The cover is pierced by a hole into which is set the trap. The flies enter the can through crevices around the cover, and when they have eaten they leave by the place through which the light comes, and this is the hole on which the trap is set. In the recent fly season I caught 2500 flies in 55 minutes with one of these traps.

Another line of attack aims to catch all flies around the stable cellar. The cellar or pit should be built tight except for one window which is screened with the screen opening at the top into two traps, one leading outward and the other inward.

The outward opening trap catches the flies that have been hatched in the stable and are seeking to go out into the open air, and the inward opening trap catches the flies that are trying to get into the dark, filth-laden cellar to lay eggs in the material which is their natural incubator.

WATER SUPPLY

Water Situation in Empire State Serious

Albany, N. Y.—That a serious situation exists affecting about 250,000 people in Westchester County is the opinion of the State Water Supply Commission following an inspection of the water supplies of the municipalities in the county. The rainfall of the last two weeks has afforded little or no relief. The Commission says that unless heavy rains occur within the next 30 days the water famine will assume alarming proportions and the draft upon the New York City supply will increase. The Commission will study the problem with a view of devising a plan to provide against a recurrence of the existing situation.

To Adopt American Methods of Measuring Stream Flow

Albany, N. Y.—Albert Alibaud, consulting engineer and special representative of the Chilean Government, was in Albany last week conferring with the engineers of the State Water Supply Commission and C. C. Covert, district engineer of the United States Geological survey, preparatory to the organization of a water resources department in the Government of Chili. Mr. Alibaud stated his intention of adopting the methods of gauging the flow of rivers that are in use by the Water Supply Commission and the Geological Survey, and accordingly purchased some current meters from the Gurley Company, of Troy, to take back to Chili with him.

Against Free Water

Dayton, O.—City officials have started a movement to discontinue all "free water" services in the future. Through an order of Mayor Edward E. Burkhardt, examiner of accounts has made an investigation of the water-works books, showing that the granting of free water to charitable institutions, schools, Fire and Police Department buildings has meant a direct loss to the Water-Works Department for 1909 amounting to \$103,645.

Unique Water and Light Plant at Indiana Town

Greensfork, Ind.—This place has what probably is the most unique water works and lighting system in the State, and while not large, the results are good. The plan was conceived by L. C. Murdock, a merchant, who planned it originally for his own benefit, but who later gave the public the advantage of it. The water system is made up of a large cistern, a lot of iron pipe and 12 horsepower gasoline engine. The lighting plant consists of the same engine, with some added electrical equipment, the motor being located in the Murdock stable. There is sufficient current to light the stores and residences.

El Paso Takes Over Water Works

El Paso, Tex.—The El Paso City Council has formally taken over the water-works plant from the International Water Company, paying \$927,000. The International Water Company is in the hands of a receiver.

Must Keep Salt Water Out of Mains

Beaumont, Tex.—The Mayor and City Council have decided that the Beaumont Water Company must do something about the salt water that has passed through the mains during the last few weeks and which has caused more or less trouble.

Harrisburg Has Clean Water

Harrisburg, Pa.—The records for the month of October of tests of rain, river and filtered water show that the water taken from the river at the filtration plant contained 1040 bacteria to the cubic centimeter, while that which left the filter plant contained seven. Of 135 samples of water taken from the reservoir none contained intestinal bacteria.

New Municipal Water Works Ready

Henryetta, Okla.—The last details of the city's new \$80,000 water works have been made and finished. The contractors have been released from their bond and the work pronounced satisfactory by the Council. The construction work was started in the spring and has just been finished. When the heavy fall rains are over the city will have one of the best water systems in Oklahoma. The water pressure is now about 90 pounds.

Half of Samples of Water Tested Unfit for Use

Lansing, Mich.—October was one of the busiest months in the matter of water analysis that the Water Board has ever experienced. A total of 52 samples of water were analyzed by Bacteriologist Holm, an average of two a day, and of the total 29 samples were found to be unfit for use for drinking purposes. These samples came from all parts of the State and from all kinds of wells. The unusual prevalence of typhoid fever throughout the State has led health authorities and physicians to look upon wells, especially those of farms and small communities, as possible sources of contagion. The proportion of contaminated water supplies examined by the Board averages about 60 per cent. Of the deep wells, such as Lansing's supply is secured from, there is very little contamination.

Contaminated Well Water

McCutcheonville, O.—The State Board of Health, in a letter to Dr. C. A. Heaton, has made a report on the condition of the public wells at McCutcheonville. The report states that the hotel well and the public well were found to be contaminated with bacteria, while one other well tested was found to be all right. The presence of bacteria in the contaminated wells was attributed to faulty drainage, and the large number of cases of typhoid fever in all probability are due to this cause.

Find no Typhoid Bacilli in Skaneateles Water

Syracuse, N. Y.—No typhoid or colon bacilli was found in a sample of Skaneateles water sent by W. B. Brookfield, of No. 109 Standart street, to the laboratories of the Health and Efficiency League of America. That was the statement in a report on the analysis which he has received. "I was much concerned about the reported pollution of the water," said Mr. Brookfield, "because I have a large family. I heard a great deal of talk pro and con and decided to investigate the matter myself." Mr. Brookfield is a member of the Health and Efficiency League, and Dr. A. M. Nelson last week sent him the following letter:

Battle Creek, Mich., Nov. 2, 1910.

W. B. Brookfield, Syracuse, N. Y.:
Dear Sir.—Specimen of water received tenth month, thirty-first day, 1910. Report no colon or typhoid bacilli. Few ordinary dust bacilli.
A. M. NELSON, M.D.

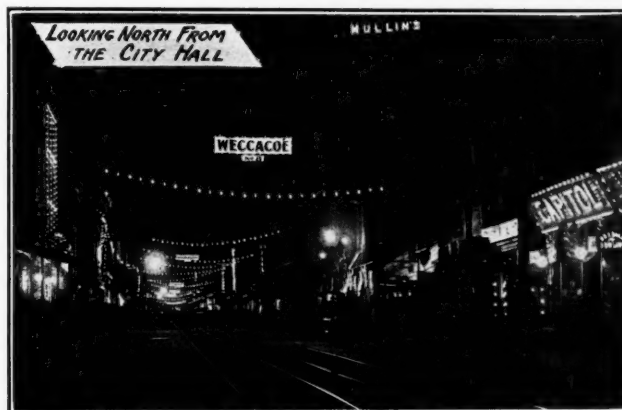
STREET LIGHTING AND POWER

Street Lighting Cost Data

St. Paul, Minn.—City Comptroller W. H. Farnham has been furnished an estimate of what it will cost to make an investigation of the street lighting system with a view of ascertaining the cost of the city taking over that part of the street lighting now being done by the Patterson Street Lighting Company. The estimate of the cost of obtaining this data was obtained from Oscar Claussen, former City Engineer, but the Comptroller said it would not be announced until after the committee having this matter in charge had decided what action should be taken. The Common Council appropriated \$500 for this work. What the city proposes to do, if feasible, is to buy the lamp head equipment for the gas lamps, the lamp heads and posts for the gasoline lights and do its own lighting and extinguishing of these lights. It is believed the equipment will cost about \$70,000, and some of the committee members estimate that the saving of the city by this method will pay for the equipment in seven or eight years.

Will Continue Ornamental Lighting for Three Months

Wilmington, Del.—Since last Winter the question of decorative lighting for Market street has been agitated. The matter of cost of standards has been the only obstacle to the installation of such a system. The Wilmington &



Courtesy Wilmington Star.

TEMPORARY DECORATIVE LIGHTING MADE PERMANENT

Philadelphia Traction Company put up arches of incandescent lights across the street for use during a recent gala week. Now the merchants have agreed to pay for the lighting for a trial period of three months. After that, if results are satisfactory, it is probable that more permanent equipment will be installed.

To Make Syracuse Best Lighted City

Syracuse, N. Y.—If a campaign which was inaugurated last week is successful, Syracuse will soon be the most uniformly and most brilliantly lighted city of its size in the United States, as far as its business section is concerned. Under the direction of George D. Kirtland, Chairman of the Chamber of Commerce Committee on Ornamental Street Lighting, numerous subcommittees were appointed to make a store to store canvass of the principal business thoroughfares in an effort to secure a uniform extension of the system of ornamental lights established as an experiment in the 300 block in South Warren street a couple of months ago. Mr. Kirtland says:

We are going to make Syracuse in its business section such a brilliantly illuminated city that it will be talked about all over the country. The district covered in the appointment of the subcommittee is only a portion of the territory in which we intend to install the system of ornamental lights. Our object is to make Syracuse such a brilliant electrical section at night that commercial travelers and guests from other cities will go away and talk about it. It is one of the best advertisements a city could have. Our comprehensive extension system includes rows of lights all around Clinton Square on both sides of the canal as far up on North Salina street as the property owners will co-operate with us and east in Genesee street as far as the City Hall and in the 400 block in South Warren street. The installation of the system in the 300 block on South Salina street will be a great object lesson and will stimulate property owners in other blocks to follow suit.

City May Order That Rate Schedule Be Filed

Indianapolis, Ind.—Argument on a petition asking that the Indianapolis Light & Heat Company be compelled to publish a schedule of classified rates as a step toward preventing discrimination, was heard by the Board of Public Works last week. The Board took the matter under advisement and may adopt a declaratory resolution ordering the company to file such a schedule. The petition was filed several months ago by Jesse C. Moore and was signed by 200 consumers living within a short distance of the company's Mill street plant. These petitioners alleged they were charged more for current for light and power than other consumers using current for similar purposes and located several miles from the plant. Mr. Moore characterized the company's attitude in charging various rates for apparently the same class of service as "an absolutely wanton and continuous disregard for its patrons," and said that the record of the Standard Oil Company did not disclose any such conduct as that of the light and heat company. John E. Scott, attorney for the company, contended that the Board had no authority whatever on the question of what rates the company should charge, so long as it did not exceed the maximum rate of 10 cents a kilowatt hour, prescribed by the franchise. He said he believed that the company should not discriminate in its rates, and said he did not believe it had, saying the company is governed by certain conditions, such as distance from plant, amount of consumption, minimum monthly charges and time of service in making special contracts.

FIRE AND POLICE

Cap Blown Off Pipe, City Without Fire Protection

Akron, O.—All sections of the city with the exception of West Hill were without water all day, Sunday, October 30, through the bursting of a 24-inch main between the pumping station at Wooster avenue and Summit Lake. The cap of the T pipe close to the big well outside of the pumping station was blown off. Water filled the pumping station to the depth of four feet. All day the city was without fire protection. Churches relying on water power to work their organs were without music, and moving-picture shows were at a standstill. The break was repaired late Sunday night.

Quick Work Due to Flash Light System

Camden, N. J.—John W. Kelley, chief of the Camden Electrical Bureau, gives the following instances of the successful use of the flash light system:

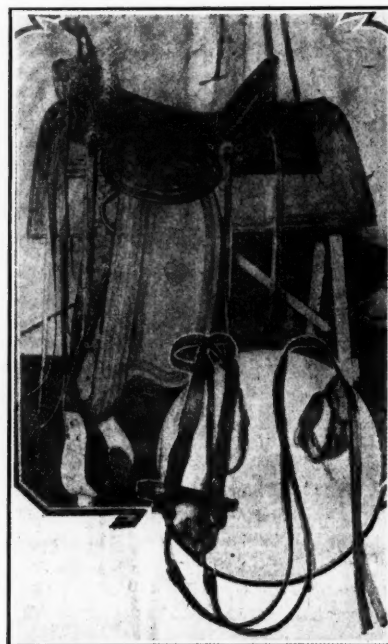
Quite recently we had a case where a German was stabbed by a colored man. We turned on the lights and thirty minutes later the stabber was in custody. He was making for the ferry and five minutes later he would have been out of the State. We have two men on post at the bounds of the main thoroughfares used by automobiles, and when a chauffeur is speeding an officer on foot hasn't much chance to stop him; but he can get his number; he telephones that in and it is relayed to the man at the other end of the street; and we get them every time. The system has been used in a case where a woman left her pocketbook in a street car. The car was stopped by an officer before it had gone three-quarters of a mile and the pocketbook was recovered. As for getting an officer in a hurry, we have turned on a circuit and have gotten answers from five men in two and a quarter minutes. As to men on posts, ten seconds is about the average time for an answer.

Pleased With Quick Response to Flash Lights

Lansing, Mich.—The Committee on Fire Department of the Racine (Wis.) City Council was in Lansing last week to inspect the police alarm system. The city of Racine is installing the Dean flash-light system and the committee made a trip to inspect the workings of the Lansing equipment. The members of the committee seemed highly pleased with what they discovered. The committee consisted of Alderman Ritter, Chairman, and Aldermen Driver, Coleman and Stoffel, and were accompanied by Frank J. St. Ohns, of Elyria, O., representative of the Dean system. They were met at the Grand Trunk station by Chief of Police Behrendt and the auto patrol and given a ride about the city. A demonstration of the working of the system was given for the benefit of the visitors and the immediate response of every patrolman on duty greatly impressed the committee.

Cowboy Equipment for Police Squad

Los Angeles, Cal.—The new mounted police squad will be equipped with Mexican saddles and cowboy equipment. The Police Commissioners have awarded to Brydon Bros.,



EQUIPMENT OF COWBOY POLICE

229 South Main street, the contract for outfitting the 10 mounted policemen at each outfit for \$48.69. At the rope strap of each saddle made on a "Tehama" tree, the saddle, equipped with box tapidero stirrups, double cinches and steel fork pommels strong enough to sustain the weight necessary to stop a runaway team when "roped" by the rider. The saddle complete weighs 34 pounds. The bridle is of neat, black leather, durable and heavy, with a black leather martingale and fitted with a "half-breed" Mexican bit. The spurs are of steel with three-quarter-inch rowels, also in black finish. At the rope strap of each saddle

will hang a 40-ft. "blackjack" lariat, together with a hitch rope. Next to the animal, beneath the saddle, will be placed a woven hair blanket, which will be covered with a military pattern saddle blanket and tied in a roll at the rear of the saddle, the patrolman will carry a square horse blanket to protect his mount from the inclemency of the weather if obliged to dismount for any length of time.

Automobile Fire Truck for Oil City

Oil City, Pa.—City Comptroller Charles W. Mullaley has received word from the Seagrave Manufacturing Company at Columbus, O., that the automobile fire truck they have been building for the city has been shipped via the Erie Railroad. The truck when it arrives will be given a test which will be witnessed by a gathering of fire chiefs from near-by cities, after which it will be installed at the central fire station. The equipment it will supplant there will no doubt be given to the Ninth Ward for the establishment of a hose house.

Will Establish Part Paid Fire Department

Perth Amboy, N. J.—It is an assured fact that a partly paid Fire Department will be established in this city next year, according to Fire Chief Theodore Anderson. He recently interviewed Alderman-at-Large Voorhees, and learned that it was the intention of the Board of Aldermen to include an appropriation toward that end in next year's budget. Probably only one or two men will be placed in the various houses at first. The Chief is in favor of two men in each house, a night and day man.

New Police Calls for Racine

Racine, Wis.—The city of Racine has contracted with the Dean Electric Company, Elyria, O., for the establishment of a police patrol flash light system, to take the place of the old system. The new system will consist of 30 boxes with 90 red lights and be equipped with telephones. The city has also ordered a combination police patrol and ambulance automobile.

Fire Protection Extended

Wausau, Wis.—After two years of work a 2-mile extension to the water works system of the city was completed last week. The pipe runs from the pumping station to the extreme southwest corner of the city limits and was laid for better fire protection. Included in the improvement, besides the long main, are two fire engine houses, which will be ready for service soon.

GOVERNMENT AND FINANCE

City Treasurer Paid on Commission Basis

Dallas, Tex.—His bond having been approved by Finance Commissioner C. B. Gillespie in the sum of \$60,000, J. Howard Ardrey took the oath of office as City Treasurer for the new term last week. The oath was administered by City Secretary J. B. Winslett. Mr. Ardrey becomes Treasurer on his bid of \$10 per year as a bonus to be paid to the city, of \$5 per year to be paid to him as salary for handling without cost to the city all money on which exchange in transmission might be charged, for paying to the city interest at the rate of 3½ per cent upon the average daily balances and to charge the city interest at the rate of 4 per cent upon its average daily overdrafts. The term of office is for two years.

Plan for Government of Third-Class Cities

Harrisburg, Pa.—One Councilmanic body to be composed of one representative elected from each ward of the city and five representatives to be elected at large, is the modified form of government for third-class cities of Pennsylvania which will be embodied in a recommendation to the League of Third-Class Cities of Pennsylvania when that body meets in this city shortly. This plan was decided upon last week by the Law and Special Committees of the League in conference in Common Council chamber. For a couple of hours prior to adjournment two committees discussed the government by commission plan and finally decided upon the above recommendation to the League instead of the commission plan. Should the League adopt the recommendation to the League a new plan of government will likely be presented to the Legislature. Another act will be drafted giving to all cities the right to require that all telegraph and telephone wires be put in underground conduits. During the session of 1907 a similar act was introduced in the Legislature and passed in the House, but was never reported out of committee in the Senate. The committees also decided to have these bills redrafted: Providing for the taxation of the real estate of all public service corporations; requiring that notice be given to the respective city of the time, place and nature of personal injuries resulting from negligence before any suit for damages can be instituted; providing that \$250,000 be appropriated by the State for its share of sewerage disposal plants that may be erected by cities and boroughs, each to pay one-half. City Solicitor Seitz, of Harrisburg, will draft a bill providing how all third-class cities may annex adjacent territory.

Seattle Mayor May Be Recalled

Seattle, Wash.—Seven thousand voters have signed the petition for the recall of Mayor Hiram C. Gill, and a recall election is assured. Care has been taken that only voters shall sign the petition. Eight thousand names are necessary to make the recall effective, but the league has hope of obtaining 15,000 signatures. The council committee is continuing its hearings of evidence against the city officials and three separate court proceedings are on file to compel city officials to withdraw their alleged protection of vice.

City Neglects to Provide for Taxes

Starbuck, Wash.—Because the City Council of Starbuck, a town of 850, near Dayton, has failed to publish an itemized statement of resources and expenditures for the coming year, property owners of "the railroad city" will pay no taxes in 1911, according to recent reports. A new statute requires that the Council make an itemized list of expenses and resources each year to be published before the first Monday in October preceding the regular levy of taxes. Forgetful of the recent ruling, Starbuck's city fathers neglected to comply with the law and as a result taxpayers there are "laughing up their sleeves" and demanding the cigars from the public servants. Just where a revenue for the city in 1911 is to be obtained is not yet settled. Recent improvements, including a new 25,000 school building, called for the maximum levy of 16 mills. This is the first instance since the new code became effective that a city has failed to provide for its taxes.

FIVE CITIES VOTE FOR COMMISSION FORM

Beverly, Mass., the Summer Capital, Among Those to Make Change—Lexington, Ky., Rejects New Charter

Beverly, Mass.—Great interest centered in the vote cast for the new charter which was adopted by a vote of 1,677 to 1,061 creating a one board government for this city and abolishing the present Council of both boards. The victory was the result of a hot campaign waged by those interested in the success of the form of government now in force in Haverhill and other cities.

Mount Vernon, N. Y.—For the second time citizens have voted to request the Legislature to pass legislation allowing Mt. Vernon to adopt a commission form of government.

Port Huron, Mich.—Commission government was adopted at a special election, November 7, by a large majority. The officers elected at the regular election the day following will not take office, unless the courts should declare the charter unconstitutional. Another election will be held in December and the new officers then chosen will be installed in January.

El Reno, Okla.—The charter under commission form of government has been adopted by a majority of about 4 to 1.

Newport, Ky.—The commission form of government has been adopted by a majority of 200.

St. Catharines, Ont.—Government by a paid commissioner is to be tried by the city of St. Catharines. At the City Council meeting last week notice was given of a motion to abolish the City Council and Water Commission and to substitute therefor a salaried expert commissioner. The scheme is popular, and it is expected that it will be in effect in January.

Lexington, Ky.—The commission form of government was defeated by a majority of 747.

Largest Town in Pennsylvania Becomes a City

Pottsville, Pa.—At the recent election Pottsville decided by a good majority to adopt a city charter.

Ten Months of Commission Government

Enid, Okla.—For more than 10 months the affairs of the city of Enid have been administered by a Mayor and three Commissioners under the charter providing for commission form of government. During that time the test of efficiency has been severely applied. The city executives entered their offices at a time when the affairs of Enid were in some confusion, but notwithstanding the handicap they have placed the city upon a business basis. Warrants that were formerly discounted heavily are now of face value. Merchants who formerly were unwilling to furnish the city with supplies on account of trouble in getting their money now seek the patronage of the city, knowing that when the article is delivered it will have been paid for in less than a week.

Haverhill Commissioners Good Financiers

Haverhill, Mass.—With two months remaining in the municipal year, there remains in the City Treasury a balance of \$297,018.58, and the expenditures for all city departments in the next two months will tell the story of \$50,000 odd balance which Mayor Edward F. Moulton hopes to close the year with. This balance is the largest in many years, and if his estimates are within \$10,000 of what the actual expenditures will total, he will be a forecaster of repute. He doesn't claim that there will be \$50,000 in the treasury at the end of the year; he makes allowances and claims only from \$35,000 to \$40,000, but his figures show that he thinks there will be something like \$57,000 left over when the year's bills have been paid.

To Divide Engineering Force Into Departments.

Duluth, Minn.—City Engineer Thomas F. McGilvray has notified the City Council of his intention to effect a thorough reorganization of the Engineering Department, which for the expenditure of the same amount should put the department upon a more thorough working basis. He proposes to establish six different bureaus, those of general office, paving, sewers, general surveys, sidewalks and inspection, and the head of each of those will thus be enabled to give closer attention to the details of the work.

Old Age Pensions for City Employees

New Bedford, Mass.—There was a large attendance in the municipal building when the special committee appointed to consider whether the bill passed at the last session of the Legislature, providing for the pensioning of city employees, shall be submitted to the voters on a referendum held its first meeting. The general sentiment of those present at the meeting was favorable to the pension system, the argument being that the prospect of a pension would make employees more efficient and would result in economy. Another meeting will be held.

Reform Proposed in Washington Municipal Budget

Washington, D. C.—Auditor Alonzo Tweedale, in his annual report to the District Commissioners urging the inclusion of appropriations for the District in one bill, says:

From the standpoint of practical municipal administration, as well as from the standpoint of municipal accounting, it is virtually essential that appropriate action be taken on the two recommendations hereinbefore made, that all appropriations and charges to District revenues be included in the regular District of Columbia annual appropriation bill, and that there be a revision and reclassification of the budget of appropriations along the lines suggested and in conformity with advanced municipal administration and accounting. Under present practice District of Columbia appropriation estimates are included in the sundry civil bill, the legislative, executive and judicial bill, in the public buildings bill and in numerous and sundry miscellaneous bills, with the inevitable consequence that at no one time, whether by the Commissioners or by Congress, in the consideration of the annual estimates of appropriations to be made within the revenue limitations imposed by Congress, are all appropriations and charges brought directly before the administrative or the legislative power.

The eleven groupings or general headings of the new form of budget as proposed are as follows, each particular general function or activity of the government being carried under a specific separate head: General government, protection of life and property, health and sanitation, highways, charities and corrections, education, recreation, parks, etc., miscellaneous, public service enterprises, interest and debt, miscellaneous temporary payments, trust and special funds.

STREET CLEANING AND REFUSE DISPOSAL

Snow Will Be Dumped in Parks

New York, N. Y.—Commissioner William H. Edwards, of the Street Cleaning Department, has made an arrangement with Park Commissioner C. B. Stover by which he hopes to save thousands of dollars for the city this winter. The Park Commissioner has agreed to let the Street Cleaning Commissioner dump snow taken from the streets along the Fifth avenue and Eighth avenue walls of Central Park and in other places to be designated later which are free from shrubbery. He has also given permission for the dumping of snow in a number of depressions in Morningside Park. This concession, which had never been made by the Park Department before, will save many miles' haul to the river front.

Urgent Need of Garbage Plant

Topeka, Kan.—There is a movement on hand among the City Commissioners to start the operation of the municipal garbage crematory at once. The plant has been completed and ready for work since September, but it was claimed that the city did not have the funds with which to operate the incinerator. It has been discovered that there is \$915 in the crematory fund which never has been spent in the work. The city officials believe that with this \$915 two or more dump wagons could be purchased, teams and men hired and the plant placed in running order. On account of the fact that nothing has been done to clean up the town, that the sanitary conditions of the alleys and dumps demand a general cleaning up and that the people are unable to procure wagons to haul away their trash, the City Commissioners believe that some action should be taken immediately and they have worked out preliminary plans to use the \$915 left in the crematory fund.

Frost Conflicts with Terms of Sprinkling Contract

West Springfield, Mass.—The extreme frost last week froze the water which had flowed into the standpipes from which the watering carts are filled and eight of them burst in the morning. The Water Commissioners never shut off the water in these pipes until after November 20, since the watering contract calls for watering the streets until that date, and they were totally unprepared for the breaks. The water was shut off as soon as the breaks were reported.

RAPID TRANSIT

Mayor Advocates Municipal Ownership of All Street Railways

Philadelphia, Pa.—As a solution of the street railway transit problems confronting the city, Mayor John E. Reyburn would have the municipality take over the entire system of the Rapid Transit Company. Whether he would have the city operate or merely control under leased operation by a corporation the Mayor declined to explain. But he would take control of the entire transportation system of the present operating company, to carry forward his comprehensive plan for subways and extensions, as a solution to the complex problem that confronts him with the application of the Philadelphia & Suburban Elevated Railroad Company for a franchise for an elevated in Broad street with elevated extensions as feeders.

Annexation Annulled Franchise Granted by County

Tacoma, Wash.—Fern Hill residents of Tacoma have won their fight for a 5-cent fare, the Supreme Court upholding the judgment of the Superior Court of Pierce County in the suit of E. E. Peterson against the Tacoma Railway & Power Company in a decision written by Justice Chadwick. Not only does the court hold that under a contract entered into between the city of Tacoma and the railway people, April 1, 1901, whereby the company agreed to install a transfer system in Tacoma on condition that the city transfer all right, title and interest held in the various franchises in Tacoma under which the company operates, but the court holds that when Fern Hill was annexed to Tacoma the franchise granted to the company by the County Commissioners died and that the company is now operating under its present city franchise. Under the decision the street car company is now operating cars to Fern Hill without a franchise.

Inventory of Toledo Railway Property Made

Toledo, Ohio.—An inventory comprising a list of the physical property of the Rail-Light Company was filed by the company with Mayor Brant Whitlock last week. This was prepared by Ford, Bacon & Davis, the company's engineers, and forms an important item in franchise renewal negotiations. Already the city has a report of the financial transactions of the company, prepared by its own accountants. The report includes an inventory of the entire plant of the company inside the city, including cars and equipment, power houses, rails, ties, wire, real estate, office fixtures and every other article that enters in any way, it would appear, into the operation of the car lines. There are about 140 typewritten pages of it. The report comes to the city following a letter of last July in which city officials expressed a desire for an inventory reported in a certain way and in which the city proposed to make its own inventory. This inventory by the company's New York engineers was offered instead. The next step in the progress of the work is that of fixing values in the inventory, and previous to that of agreeing upon a method whereby the values can be fixed.

Model Street Car

Washington, D. C.—Washington has at last a street railway car which complies in all respects with the regulations prescribed by the Interstate Commerce Commission and meets the needs and comforts of the public both in winter and in summer. The new car combines the best features of the pay-within and pay-as-you-enter types, and it is suitable for both summer and winter.

Both end bulkheads and front and rear platforms are done away with. The front and rear doors are under the control of the motorman and the conductor, respectively. There are no grab handles on the outside. This, with the absence of platforms, should reduce the number of boarding and alighting accidents to a minimum. The side windows have a small lower and a large upper sash. The former can be dropped and the upper raised, so that when both are open there is a clear open window space of 30¾ x 34¾ inches. As the space between the windows is but between 3 and 4 inches, he believes this will amply meet the needs of the warm weather. The three windows in the ends of the cars can also be opened. This type of car has several advantages over the strictly open car.

MISCELLANEOUS

Chicago City Hall Honestly Built

Chicago, Ill.—The Chicago Bureau of Public Efficiency has officially reported to Mayor Edward F. Busse that Chicago's \$5,000,000 new City Hall was built without "graft." In its report the bureau declares that the experts who made the investigation into the charges of "skimping" in the construction of the building concur in the opinion that the building was properly erected and that the charges which have been made are unfounded.

Shade Trees and Business Street

Perth Amboy, N. J.—Deciding that shade trees have no place on business thoroughfares, the Shade Trees Commission at a special session held last week passed a motion to remove all shade trees on Smith street from its easterly end to the Central Railroad tracks and on State street from Smith to the Lehigh Valley Railroad bridges. The work will be started at once on Smith street and will be extended as far as the present amount of appropriation will extend. When that amount, which is about \$100, has been used requests will be made to the Board of Aldermen for further funds to complete the work.

Square Foot Tax for Billboards

Tacoma, Wash.—An ordinance providing for licensing billboards was introduced at the Municipal Commission's legislative session last week. The proposed measure was introduced in the name of Commissioner L. W. Roys, of the Department of Public Safety. It provides for two classes of licenses. First class licenses will be issued to persons conducting a general billboard business for \$50 a year and 3 cents a square foot for all boards erected. Second class licenses will cost \$25 a year and will be issued to individuals or corporations limiting their business to distributing bills, etc. The measure amends an old billboard ordinance requiring builders to get permission from the City Council before putting up boards over six feet high. It is provided that before licenses are obtained the applicants must file with the City Clerk a statement of the proposed location, verified by an affidavit by the party seeking the license. The \$50 must be paid then, as well as an amount equivalent to 3 cents a square foot for all boards listed. The builders must notify the commission of any other structures proposed and shall pay 3 cents a square foot for all additional boards.

Scenic Features of a Denver Park

Denver, Col.—Inspiration Point, an eminence near Berkeley Park, more than 200 feet above the city, has been improved by the construction of a retaining wall and the building of driveways will make it more accessible. The vista includes mountains more than 200 miles apart. In the foreground are farming villages and good agricultural territory. Three lakes are within a half mile of the point. The concrete wall was built for safety and cost \$8,000. Next year grass and shrubbery will be planted, pavilions built and a lighting system installed. The cost of acquiring the 25 acres of land included in the park was only \$8,000.

Cornerstone of Springfield Municipal Building Laid

Springfield, Ohio.—As the first public event of importance having to do with Springfield's new \$1,000,000 municipal group, the laying of the cornerstone last week was a ceremony attended by circumstances most auspicious, impressive in dignity and simplicity, yet inspiring in the historical significance attaching itself to the observation. As chief executive of the city, Mayor Edward H. Lathrop formally and officially carried out the time-honored custom that marks the birth of prominent public buildings by laying the block of limestone and then placing in the recess in the stone the casket containing a varied collection of relics, documents and valuables, where they will, in all probability, remain in preservation for many generations after those who manifested such an interest in the manner of their disposition have long since passed off the stage of action. As chief orator of the day, Dr. Marion LeRoy Burton, the new president of Smith College, graced the occasion with his presence and gave an inspiring address, beautiful in theme and treatment, in the Court Square Theater. Equally as interesting was the shorter address by Mayor Lathrop, who briefly reviewed the old days when, as they are doing now, the people of Springfield put their greatest and best efforts into the construction of their public building.

City Is Poor Landlord

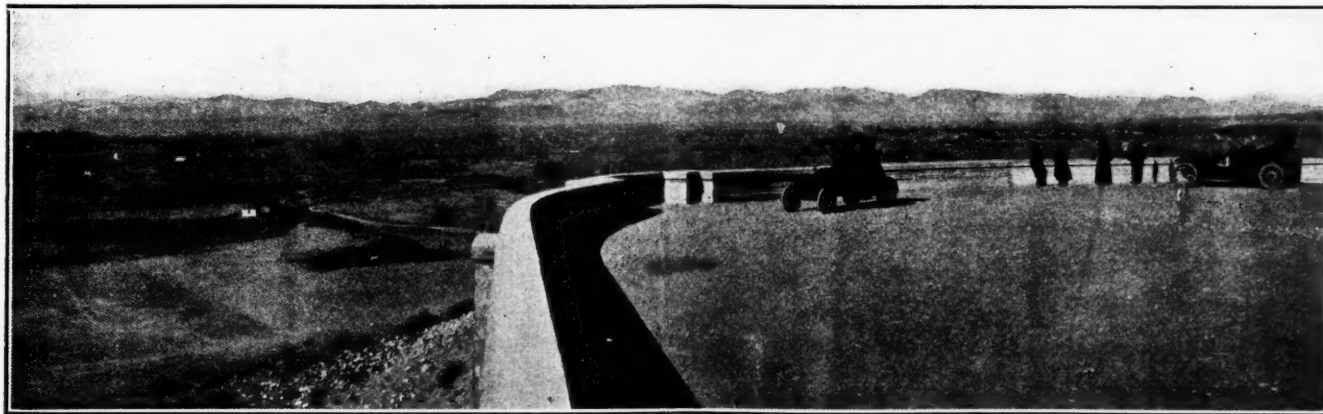
Los Angeles, Cal.—That the city has been a poor landlord to its tenants has been discovered by the Council's Land Committee, but in a report it made to the Council it recommended a reform. The city owns and lets a house at 139 North Avenue Eighteen. The roof leaks, the windows are broken, the kitchen is badly in need of paint and paper and the tenant is complaining. The city also owns a grocery store with living rooms in the rear at 105 North Avenue Twenty. The plumbing is in such bad condition that the city health officer complained about it. The committee recommended that the Council spend enough money on both places to put them in decent condition.

Recommend New Plan for House Numbering

Oakland, Cal.—The Street Department has just completed maps for submission to the City Council recommending a system of house numbering which will completely change the one in vogue. Several months have been spent upon this work. Before the numbers can be given out, however, it is necessary for the City Council to amend the existing ordinances and to adopt a new ordinance which will cover both the old city and the annexed territory. This ordinance is in course of preparation by the City Attorney.

Quaker City Mayor Would Commune with Nature

Philadelphia, Pa.—Mayor J. E. Reyburn has under consideration the improvement of Cobb's Creek Park, Morris Park, Pennypack Creek Park and other property acquired or about to be acquired for the park system, so as to provide footways for persons who would like to commune with nature in these beautiful spots. He would have planks, logs and other improvised rustic bridges placed and paths opened, so that persons fond of walking might enjoy these parks. It is estimated that \$10,000 would accomplish the result sought.



VIEW OF DRIVEWAY AND WALL AT SUMMIT OF INSPIRATION POINT

LEGAL NEWS

A Summary and Notes of Recent Decisions—Rulings of Interest to Municipalities

Smoke Ordinance—Violation

City of Buffalo v. George P. Ray Manufacturing Company.—Buffalo city ordinances make it unlawful for any person to permit the discharge of large quantities of smoke, having a natural tendency to cause injury, detriment or annoyance to any person or persons, or the public, or to endanger the comfort, repose, health or safety of the public, or detriment to business or property. Held, that a violation of such ordinance did not depend on whether the acts constituted a nuisance at common law, and hence requests to charge that, in order to sustain a verdict for the city, the jury must find that a nuisance existed and that defendant's use of its premises was unreasonable were properly refused. —New York Supreme Court, 124 N. Y. S., 913.

Funds Available for Municipal Railways

Barsaloux et al. v. City of Chicago.—Since the primary use of streets is to accommodate travel and since street railways afford increased facilities therefor, their use of streets does not impose any additional servitude. The city of Chicago can use the funds provided for by Traction Ordinance February 11, 1907, comprising a percentage of the net earnings of the traction companies or any other available corporate funds to purchase or construct subways in the streets or to do necessary preliminary work to enable the city to determine whether such construction is advisable. —Supreme Court of Illinois, 92 N. E. R., 525.

Refunding Assessment Fund Balance

State ex rel. McCullough v. City of Seattle.—Laws 1909, requiring the refunding to the persons who contributed thereto of funds in the treasury of a city belonging to the fund of a local improvement district remaining after the payment of the cost and expense of the improvement for which assessment was made, though under prior acts action to recover the same was barred by limitations, does not violate the provisions of the federal and State constitutions that no person shall be deprived of property without due process, the city being under a moral obligation to repay the excess assessments to those who paid them, and no property right of the city being involved. —Supreme Court of Washington, 110 P. R., 1,009.

Street Railway Franchise—Power of Revocation

Sylvester et al. v. Superior Court for Benton County.—Authorized municipal action can be taken by resolution as well as by ordinance, unless a particular mode is prescribed by law or charter, a resolution ordinarily having the same effect as an ordinance, except in matters of legislation. A franchise under an ordinance to lay railroad tracks in a street on condition was legally revoked by a resolution declaring a forfeiture for breach of a condition and by giving notice thereof. Unlawful occupation of a street by a railroad constitutes a public nuisance, which may be abated by an abutting owner suffering a special injury therefrom. Rights of public service corporations asserted under eminent domain laws should be strictly construed. A railroad company cannot condemn the interest of abutters in a street where its franchise to occupy the street has been revoked for breach of a condition of the grant. —Supreme Court of Washington, 111 P. R., 19.

Bonds—Sinking Funds

E. T. Lewis Company v. City of Winchester.—Constitution requiring provision to be made for a sinking fund to redeem municipal bonds does not require a levy sufficient to retire the principal of the bonds without regard to accumulations to the sinking fund on account of its interest earnings, it being presumed that the fund will be invested in some safe way which will produce annual interest, thereby lessening the taxpayers' burden. Constitution requiring provision to be made for sinking funds to redeem municipal bonds is designed to benefit the bondholders and does not invalidate bonds on account of any deficiency in provision for or loss of sinking fund, whether arising from mistake or otherwise. —Court of Appeals of Kentucky, 120 S. W. R., 1,094.

Elections—Ballots—Irregularity

Durgin v. Curran.—In a city election the aldermen can act only on the ward returns, having no power to recount the ballots, and hence their determination based on a recount is without effect. A ballot is not vitiated by a ward clerk placing a distinguishing mark on it at the time of the count. In the absence of a contrary showing a distinguishing mark on a ballot will be presumed to have been made by the voter. Any other mark than a single X which the statute prescribes for marking a ballot is a distinguishing mark, which invalidates the ballot. A ballot is vitiated by the voter placing two X's in the square over a party name. That the name of one of the candidates for mayor was written on a ballot under the name of the other which was not erased does not affect the ballot as to the other officers voted for. A ballot is vitiated by placing an X in the square over a party name and an X after the name of one or more individual candidates. Writing the name of a candidate above a name erased, instead of under it as required by statute, invalidates the ballot as to that particular office. Where the names of three candidates for councilman were printed in one column, if it was improper, on erasing the middle name, to write another name in a blank space below the third name, the ballot was not invalidated as to the vote for alderman. That a sticker for one candidate of mayor was placed over the name of the others on a ballot in the party group voted for without erasing the latter did not vitiate the ballot as to the other officers voted for. Where the names of three candidates for councilman were printed in a column and the last name was erased, the fact that another name was written after it, instead of under it, as required by law, did not affect the ballot as to the vote for alderman. Inserting a name on a ballot where another name is erased, instead of inserting it below, as required by statute, invalidates that vote. A distinct pencil mark on a ballot in addition to an X is a distinguishing mark, which invalidates the ballot, though it was made carelessly and was unnoticed by the voter. A mark resembling the figure 4 on which a voter made an X in voting was a distinguishing mark, which invalidated the ballot. In passing on the validity of a ballot not marked according to law, a court cannot consider the voter's intention as manifested by the marking. Under Rev. St. c. 1, § 6, par. 1, when a court finds a statute clear in its terms and unambiguous in its meaning, it must give it the construction conveyed by the common meaning of the language. Rev. St. c. 6, § 43, prohibiting rejection of ballots on account of distinguishing marks, was repealed by necessary implication since, if given effect, it would abrogate the entire policy and purpose of the Australian ballot system. —Supreme Judicial Court of Maine, 77 A. R., 688.

Street Railway Franchises—Power of Revocation

City of New York v. Montague et al.—The franchise to operate a street railroad springs from the State, and not from the city where its lines lie, though it is essential that the consent of the municipal authorities should be secured, and hence the right to revoke the franchise rests in the State, and the municipality cannot move to compel a removal of such a company's tracks on the ground that they constitute a nuisance, not from operation in a manner not authorized by the grant, but for mere nonuser. The control which a municipality exercises over the public streets is in trust for the State, and not as a corporate or municipal property. —New York Supreme Court, 124 N. Y. S., 960.

Water Mains—License—Revocation

Wells et al. v. Village of Croton on Hudson.—If it be deemed that a town impliedly consented to water pipes being laid in a public street by the owner of the fee, yet, after such pipes had been used for 60 years, such consent could not be revoked. —New York Supreme Court, 124 N. Y. S., 1,058.

Smoke Ordinance—Police Power

City of Rochester v. Macauley-Fien Milling Company.—Rochester city ordinance, prohibiting the emission of dark smoke from chimneys during certain hours of the day, and providing a penalty for the violation thereof, was within the city's police power. —Court of Appeals of New York, 92 N. E. R., 641.

NEWS OF THE SOCIETIES

New England Mayors—More than a dozen Mayors of New England municipalities and other men identified with the civic life of neighboring communities met at the Boston City Club November 10, as the guests of the Boston—1915 movement and of the Boston Chamber of Commerce. Their visit to Boston represents the beginning of the "Civic Advance Campaign." These present included Mayor Charles A. Strout, of Portland, Me.; Mayor J. E. Burke, of Burlington; Mayor Henry O. Carpenter, of Rutland, Vt.; Mayor E. T. Buckingham, of Bridgeport, Conn.; Mayor Alfred C. Wyatt, of Laconia, N. H.; Mayor John T. Coughlin, of Fall River; Mayor Charles Bruce, of Everett; Mayor Robert A. Kenyon, of Pawtucket, R. I.; Mayor W. Fred O'Connell, of Fitchburg; Mayor George H. Fall, of Malden; Mayor Eugene H. Moore, of Melrose; Mayor William S. Woods, of Taunton; Mayor Charles S. Ashley, of New Bedford; Mayor Robert E. Burke, of Newburyport; William F. Fox, Health Commissioner of Taunton; D. H. O'Keeffe, City Solicitor of Taunton; W. E. McClintock, Chairman of the Chelsea Board of Control; George H. Dunham, of the same board; Alton E. Briggs, re-elected to the board, and Charles H. Reed, executive clerk of that body; Dr. C. P. Holden, chairman of the Melrose Board of Health, and Sylvester Baxter, chairman of the Malden Park Commission.

John T. Fitzgerald presided during the latter part of the meeting, having been elected presiding officer for the two days. Other officers who will act during the same period are Mayor Carpenter, of Rutland, Vt.; Mayor Wyatt, of Laconia, N. H.; Mayor Buckingham, of Bridgeport, Conn., and Mayor Kenyon, of Pawtucket, R. I., vice-presidents, and A. L. T. Cummins, city clerk of Portland, Me., secretary. President Bernard J. Rothwell, for the Chamber of Commerce, extended a cordial welcome to the visiting municipal chiefs, and John L. Sewall, executive secretary of the Boston—1915 Movement, told of what was planned for accomplishment through this movement. Mayor Fitzgerald not only welcomed his fellow mayors to Boston, but placed stress on the result to all New England of a concerted move to bring the six States more prominently before the commercial world. James P. Munroe, executive director of the movement, also spoke.

Then followed some interesting statements from the various mayors who were called upon by Mayor Fitzgerald for an expression of views, especially on the system of taxation operative in Massachusetts. One of the first to respond to the mayor's invitation was Mayor Strout, of Portland, who expressed his hope that much good would result from this conference. He was sure that the delegates would feel repaid for their visit here. In reply to a direct question by Mr. Fitzgerald, Mr. Strout said that in his city there was no limit to the amount that could be raised by taxation. Mayor Ashley, of New Bedford, said that there was no city in Massachusetts that could live on the \$12 a thousand limit. He added that he had frequently been before the Massachusetts Legislature in advocacy of a change in the system. He believed that all the running expenses of a municipality should be met by direct

taxation. The system of a city meeting its expenses as it goes along is one that, while it may prove an expensive proposition at the start, will work out advantageously. Others who spoke were Mayor Fall of Malden; Mayor Burke, of Burlington, Vt.; Mayor Carpenter, of Rutland, Vt.; Mayor Wyatt, of Laconia, N. H.; Mayor Woods, of Taunton, and Mayor Moore, of Melrose. Following a buffet luncheon at the City Club the guests went down to City Hall for a further conference in the aldermanic chamber. Mayor Fitzgerald presided again, and Professor William T. Sedgwick, of the Massachusetts Institute of Technology and Dr. Thomas E. Maloney, of Fall River, spoke on "The City's Inspection of Its Milk Supply"; and Professor F. Spencer Baldwin and H. La Rue Brown discussed "Old Age Pensions." In the evening the visitors went to the Boston Arena to witness the first presentation of the pageant "From Cave Life to City Life."

South Carolina Good Roads and Drainage League.—The League met in Aiken November 2, President James Cosgrove, of Charleston, presiding. The meeting was largely attended and the business session which convened at 11 o'clock was given close attention. After the opening talk of the President the League was welcomed to the city by D. S. Henderson and responded to by Samuel Dibble, of Orangeburg. The Supervisors of several counties then made reports on the work in their respective counties. George D. Marshall, a United States Government road expert, told in detail of his work on a model highway near Aiken, stating that the total cost would not exceed \$500 a mile. The road is 30 feet wide and consists of 10 inches of mixed stone and clay, all of which is secured by the roadside. Congressman A. F. Lever delivered an address containing facts and figures which showed that South Carolina is losing annually \$6,000,000 from bad roads in the transportation of farm products alone. If improved roads will increase the price of farm lands \$1 per acre, which is less than half the estimated increase, this State would be benefited \$19,000,000 by good roads, and the main question now to be considered by the people is, "What does it cost not to have good roads?" An auto ride around the city was given the League in the afternoon and at night a reception at the Titian Hall by the citizens of Aiken.

Washington Medical and Surgical Society.—The Commissioners of the District of Columbia have received from the Washington Medical and Surgical Society a copy of a resolution indorsing the proposed plan for the converting of the slums into recreation centers and playgrounds. The resolution is as follows:

Whereas the alley tenements are undoubtedly a constant and serious menace to the physical and moral welfare of the community; and

Whereas the closely built condition of the city has deprived the children of necessary space for play and exercise requisite for the proper development of the body and maintenance of health, and

Whereas the Washington Medical and Surgical Society, being fully cognizant of the evils of these conditions and taking a deep interest in the sanitary and esthetic improvements of the Nation's Capital, therefore be it

Resolved, That this society indorse the plan of the Commissioners of the District of Columbia to eliminate the alley slums by converting them into playgrounds.

The resolution is signed by Dr. Harry Kaufman, President of the Society; Dr. George H. Heitmuller, Dr. Lewis J. Battle and Dr. J. Ramsey Nevitt.

The Society will be informed that the Commissioners will welcome its co-operation in presenting to Congress at the next session legislation for the elimination of the slums and the establishment of recreation centers.

Western Pennsylvania Public Health Conference.—At the meeting to be held at Pittsburgh, Pa., November 29-December 1, Dr. W. A. Evans, Commissioner of Health, of Chicago, Ill., will speak on "Educational, Preventive and Constructive Health Work in the Modern City." Among the other speakers will be Dr. William H. Allen, Director, Bureau of Municipal Research, New York, and Miss Adelaide Nutting, director Department of Nursing and Health, Teachers College of Columbia University, New York.

Engineers' Club of St. Louis, Mo.—At the meeting of the club, November 2, Charles M. Talbert, assistant to the President of the Board of Public Improvements, spoke on "The Process of Locating the Municipal Free Bridge," and Mr. E. B. Fay, of Brenneke & Fay, consulting engineers, on "A Brief Description of the Municipal Free Bridge."

Calendar of Meetings

November 16-18.

New York State Sanitary Officers.—Tenth Annual Conference, Y. M. C. A. Auditorium, Buffalo, N. Y.—Dr. E. H. Porter, Commissioner of Health, Albany, N. Y.

November 16-19.

League of California Municipalities.—Fourteenth Annual Convention, San Diego, Cal.—H. A. Mason, Secretary, Pacific Building, San Francisco, Cal.

November 17-19.

National Society for the Promotion of Industrial Education.—Annual Convention, Boston, Mass.—James C. Monaghan, Secretary, 20 West 44th St., New York, N. Y.

November 21-23.

City Commission Congress.—Meeting, Galveston, Tex.—R. E. L. Giles, Secretary, Galveston, Tex.

November 29-December 1.

Washington Good Roads Association.—Annual Convention, Walla, Walla.—Samuel Hill, President, Maryhill, Wash.

November 29-December 1.

Western Pennsylvania Public Health Conference.—Meeting, Pittsburgh, Pa.

December 2-3.

New Jersey Sanitary Association.—Annual Meeting, Lakewood, N. J.—J. A. Exton Secretary, 75 Beech Street, Arlington, N. J.

December 6-9.

American Society of Mechanical Engineers.—Annual Meeting, New York, N. Y.—C. W. Rice, Secretary, 27 West 39th St., New York, N. Y.

December 7.

American Society of Civil Engineers.—Regular Meeting.—C. W. Hunt, Secretary, 220 W. 57th street, New York.

December 7-9.

American Institute of Chemical Engineers.—Annual Meeting, New York, N. Y.—J. C. Olsen, Secretary, Polytechnic Institute, Brooklyn, N. Y.

December 8-10.

Playground Institute.—Meeting, Holyoke, Mass.

December 12-14.

Association of American Portland Cement Manufacturers.—Annual Convention, New York, N. Y.—Percy H. Wilson, Secretary, Land Title Building, Philadelphia, Pa.

December 12-23.

National Association of Cement Users.—Annual Convention, New York, N. Y.—Richard L. Humphrey, President, Harrison Building, Philadelphia.

December 14-16.

American Civic Association.—Annual Meeting, Washington, D. C.—Richard B. Watrous, Secretary, Washington, D. C.

January 18-19.

American Society of Civil Engineers.—Annual Meeting, New York.—C. W. Hunt, Secretary, 220 W. 57th street, New York.

February 1-3.

Nebraska Cement Association.—Western Cement Exposition, Omaha, Neb.—Peter Palmer, Secretary, Oakland, Neb.

PERSONALS

ARDREY, J. HOWARD, City Treasurer of Dallas, Tex., has been re-elected to the position for two years following the receipt of bids at which Edwin Hobby and R. P. Wofford were his competitors.

AYLING, FRED W., Toledo, O., member of the firm of DeShetler & Ayling, has been appointed a member of the Board of Health by the Mayor.

BAKEMAN, WILLIAM, Chief of Police of Minot, N. D., has resigned and Captain Henneghan is slated for promotion.

BOOTH, JOHN, Manhattan, Kan., a retired farmer, 87 years old, has made a gift of \$1,000 to establish a children's playground, as he has no children of his own on whom to spend his money.

BUTTERWORTH, NELSON, Chief of the Volunteer Fire Department and a special officer of Rock Springs, W. Va., was found murdered at his home; there is no clue to the murderer.

CHESTER & FLEMING, Consulting Engineers, Pittsburg, Pa., have been retained by the Ohio Valley Water Company to supervise the operation of its water-works system, supplying about 100,000 people in the suburbs of Pittsburg. This firm has also been retained to supervise the operation and general management of the plant of the Edgeworth Water Company, Borough of Edgeworth.

CORBETT, C. C., Mayor of Macclenny, Fla., has resigned on account of failing health, and B. L. Morgan, President of the City Council, is Acting Mayor.

CROWELL, ROBERT R., New York, N. Y., Engineer in charge of the Topographical Bureau of the Borough of Queens, who has been under suspension pending the investigation of charges preferred against him, has been reinstated, the charges not having been sustained.

COVINGTON, J. C., Columbia, S. C., has been elected assistant engineer in the City Engineer's office.

DAVIS, W. S., Mayor of Waynesboro, Mass., has been re-elected and W. H. Moore, Marshal, with J. E. Bufkin, J. F. Pou, Jr., A. M. Gandy and W. E. Lathrom as Aldermen.

ERICSON, JOHN, City Engineer, and Henry A. Allen, Consulting Engineer, Chicago, have started an exhaustive investigation to determine whether the operation of the city's pumping plants by electricity to be obtained from the Sanitary District is feasible, safe and economical.

HANSON, CHARLES, Superintendent of the city water and lighting plant of Alpena, Mich., has resigned, and candidates for the position include John D. Mulvena, Alderman from the First Ward; A. C. Calkins, an engineer, and William H. Fitzhugh, Superintendent of the Lighting Department of Bay City, Mich.

LANSING, EDWARD TEN EYCK, Little Falls, N. Y., a Civil Engineer, who had charge of the construction of sewers and water system at Lansingburg, Glens Falls and other places in that section, and who had also been engaged in railroad work, died last week, aged 50 years.

LENT, DR. EDWIN J., South Bend, Ind., has been named by Mayor Goetz as a member of the City Park Board to succeed Fred C. Winkler, deceased.

LONG, H. D., Market Clerk of Montgomery, Ala., has been named by Mayor William A. Gunter as Purchasing Agent for the city, a position recently created by the City Council.

MAGEE, H. F., Chief of the Fire Department of Dallas, Tex., had four ribs broken and was otherwise injured when a street car ran into the rear of his automobile while he was responding to a fire.

MAHONEY, THOMAS H., Westfield, Mass., has been named as Chief of the Fire Department, vice George H. Byers, term expired, and Herbert H. Thorn, Captain of Hose Company No. 1, has been appointed a member of the Board of Engineers.

MAHOOL, J. BARRY, Mayor of Baltimore, Md., has selected Francis K. Carey, Josias Pennington, Calvin W. Hendrick, Chief Engineer of the Sewerage Commission, Norman James and William H. Fehsenfeld as five of the eight members of the commission which is to have charge of the work of covering Jones' Falls with a boulevard, for which \$1,000,000 loan was voted by the citizens last week.

MCGOWAN, W. R., Estabuchie, Miss., has been elected Mayor; J. R. Webb, Marshal; M. C. Conway, Treasurer, and O. C. Fatheree, O. E. Cone, R. B. Gunn, G. L. Gardiner and J. Daly, Aldermen.

MOHLER, CHARLES K., Consulting Engineer, has opened an office at 1839 McCormick Building, Michigan avenue and Van Buren street, Chicago, Ill., as a specialist on the design of abutments and retaining walls, and for reports on traffic and transportation valuations of railroads, etc.

PICKLESIMER, T. G., Mayor of Bryson City, N. C., was killed while alighting from a train which was pulling out of the station, falling beneath the wheels; he was 30 years of age and a lawyer.

POSTON, W. H., Chief of the Fire Department of Pomona, Cal., has been re-elected; also G. A. McCarter and M. E. Ludden, Assistant Chiefs; Fred Charles, Secretary, and John Walker, Treasurer.

REYNOLDS, W. H., Orlando, Fla., has been elected Mayor; Benjamin Drew and R. L. Myer, members of Council, and C. A. Boone, W. A. Smith and Charles Maltbie, City Clerk, City Treasurer and City Marshal, respectively.

ROEHRICH, VICTOR H., St. Paul, Minn., who is now employed in the Government laboratories at Washington, D. C., has been appointed, by Mayor Keller, as Chief Analyzing Chemist of the City of St. Paul at \$1,800 per annum.

SEVERNS, JAMES P., Chief of the Fire Department of Hillsboro, Tex., has been re-elected, also Cas Horne and Dixie Kirksey as Assistant Chiefs; John F. Anderson, Secretary, and T. G. Hawkins, Treasurer.

SMITH, THORNTON A., Everett, Mass., has been named as City Auditor by Mayor Bruce, succeeding Charles A. Ford; he is auditor for an express company and a prominent citizen.

TAYLOR, Dr. T. U., Austin, Tex., Dean of the Engineering Department, University of Texas, has been agreed upon by City Engineer J. D. Trammell and John B. Hawley, representing the Board of Trade of Fort Worth, Tex., as the third member of the city reservoir board, which will at once investigate possible available sites for the impounding and storage of surface water sufficient for the needs of 250,000 people, together with costs and recommendations.

TAYLOR, W. H., Chief of Police of Montgomery, Ala., has been reappointed by Mayor William A. Gunter; also Miles Smith as Police Captain.

THURSTON, E. T., JR., formerly of the firm of Conchot & Thurston, Designing and Constructing Engineers, has opened an office in San Francisco, Cal., as a Consulting Engineer.

ULLRICH, JACOB, Chief of the Fire Department of Englewood, N. J., died last week following an attack of the gripple contracted at a fire in March last; he was born in Germany in 1858, and became a member of the department at its organization in 1888.

MAYORS ELECTED LAST WEEK

New York

Cortland—Lynn R. Lewis over John C. Barry and W. J. Greenman.
Lockport—James J. Moran.
Middletown—R. M. Cox.
Niagara Falls—Philip J. Keller over Aldin B. Chase.
North Tonawanda—Louis T. Fick re-elected over Charles Lorenz.
Ogdensburg—George E. Van Kerner over Walter G. Kellogg.
Poughkeepsie—John K. Sague re-elected over John C. Welch.
Rensselaer—Thomas Pinney over John F. Kapp.
Watervliet—Eugene J. Hanratta re-elected over Hilton.

New Jersey

Absecon—Wesley C. Smith.
Allentown—James W. Ralston.
Allentown—Albert Robinson.
Alpine Borough—Franklin W. Hopkins.
Belvidere—Thomas B. Hayes, re-elected.
Bloomfield—William Hauser.
Bradley Beach—William E. McDonald.
Brigantine City—Alfred B. Smith.
Boonton—Geo. S. Lyon over G. E. Bates.
Caldwell—John Espy.
Camden—Charles H. Ellis, re-elected.
Cape May Point—Edward W. Springer.
Deal Beach—William Levy.
Demarest Borough—Matthew Bogert.
East Orange—Julian A. Gregory.
Egg Harbor City—George Mueller re-elected over Fred Schuchard.
Elizabeth—Alfred A. Stein over Samuel J. Berry, Sr.
Emerson Borough—Wm. J. Timberman.
Flemington—A. C. Hulsier, re-elected.
Freehold—Alexander L. Moreau.
Garwood—Walter F. Sargent over John A. Burns.
Gloucester City—Robert A. Lincoln re-elected over John Beaton.
Hackensack—Charles W. Dell.
Hackettstown—Shafer Sigler over Thos. A. Shields and William M. Everitt.
Haledon—Edward Pries.
Harrison—Joseph P. Riordan, re-elected.
High Bridge—William W. Williams.
Highlands—Allen R. Reed.
Holly Beach—Frank E. Smith.
Irvington—Wm. L. Glorieux, re-elected.
Keyport—William E. Varn.
Long Branch—Edwin W. Packer.
Madison—George W. Downs.
Margate City—Josiah Norcross.
Merchantville—Mayor Longstreth, re-elected.
Monmouth Beach—Jesse E. Manahan.
Millville—W. Fred Ware over Henry R. Erickson and Martin W. Lane.
Montclair—Ernest C. Hinch.
Morristown—Arthur S. Pierson.
Newark—Jacob Haussling for third term over Edward E. Gnichtel.
New Providence—T. P. Crane, re-elected.
North Caldwell—Ralph E. Bach.
North Haledon—Henry Clews.
Nutley—John T. Lux, re-elected.
Orange—Arthur B. Seymour, re-elected.
Perth Amboy—Albert Bollschweiler re-elected over Fullerton.
Plainfield—George W. V. Moy.
Phillipsburg—John H. Firth, re-elected.
Prospect Park—Adrian Struyk.
Red Bank—Frank Pittinger.
Roosevelt—Joseph A. Hermann, re-elected over John J. Reason.
Roselle Park—George H. Horning over Mayor Louis V. Ebert.
Salem—Isaac C. Smashey, Jr.
South Amboy—Michael Welsh.
Somers Point—Herman Steck.
Ventnor City—James R. Bow.
Vineland—John A. Ackley over Mayor Waldo F. Sawyer, by two votes.
Wenonah—C. H. Lorence, re-elected.
West Caldwell—Caleb A. Harrison.
Westfield—J. A. Dennis over E. S. Floyd.
West Cape May—James B. Hastings.
West Long Branch—M. V. Poole re-elected.
West Orange—Dr. Samuel M. Muta.
Wildwood—Latimer R. Baker.
Wildwood Crest—Philip R. Baker.
Woodbury—Samuel H. Ladd re-elected over former Councilman M. F. Cattell.

Mayors in Other States

Derby, Conn.—J. A. Miles over Mayor J. A. Atwater.
Stamford, Conn.—Dr. Charles E. Rowell over Galen A. Carter.
Ft. Meade, Fla.—L. L. Johns.
Lakeland, Fla.—John F. Cox, fourth term.
Titusville, Fla.—B. R. Wilson.
Port Huron, Mich.—Mayor John J. Bell.
Saginaw, Mich.—George W. Stewart re-elected over Emmett L. Beach.
Gloster, Miss.—Ratcliff.
Manchester, N. H.—City Clerk Edward C. Smith over Dr. James Sullivan.
Nashua, N. H.—Wm. H. Barry over Field.
Cumberland, Md.—Wilbert T. Toukesdery over W. J. Boyden.

TRADE NOTES

Cast-Iron Pipe—Chicago: Market is quiet as is usual at this season. Quotations: 4-inch, \$27; 6 to 12-inch, \$26; 16-inch and up, \$25. New York: Current business in small orders is diminishing. Very low prices have been made on recent lettings. Quotations: 6-inch, carload lots, \$22. Birmingham: Tonnage on order books has been much reduced. It is believed that present prices would not be acceptable to large producers. Prices have been reduced about \$1 a ton. Quotations: 4 to 6-inch, \$21; 8 to 12-inch, \$20; over 12-inch average, \$19.

Lead—Market is a little stronger. Quotation: 4.40c., New York; 4.30c., St. Louis.

New Type of Auto Fire Apparatus Tested—An official test of the new automobile combination hose cart, which was built by the Couple Gear Freight Wheel Company, of Grand Rapids, Mich., for the Springfield, Mass., Fire Department, was made last week and it worked finely, meeting every requirement specified in the plans which were sent to the Western concern. Lacking a body, only the chassis being built out west, sand was used to get the weight. For the present the car will be kept in the garage of the Springfield Automobile Company at 40 Liberty street, while the body is being made here.

Creosoted Blocks—Ayer & Lord Tie Company, Railway Exchange Building, Chicago, Ill., will supply from their plant at Argenta, Ark., creosoted wood block used in paving about three miles of streets in Little Rock, Ark., on the contracts awarded to E. J. Wetterstrom, Chicago.

Westrumite Plant—Five acres in Kenton, Ore., have been purchased by the Westrumite Paving Company from the Kenwood Land Company, of Portland. Work will start immediately on a modern paving plant on the land. The building and machinery will cost \$60,000.

Sanitary Drinking Fountain—John Hall, Jr., 1892 Riverdale street, Chicopee, Mass., recently received an order to install Springfield Sanitary Drinking Fountains in 25 schools in Boston, Mass. Hartford, Mass., has also given an order to have these fountains installed in the schools of that city. Mr. Hall is receiving hundreds of letters from all over this country and Canada where his fountains have been installed expressing the satisfaction they are giving.

Iron Pipe—The Seaboard Pipe Foundry Company, Savannah, Ga., is planning for the erection of a large plant which will include a main shop, 104 x 185 ft.; machine shop and tapping room, 56 x 100 ft., storeroom, 50 x 100 ft., and cleaning room, 35 x 100 ft. The buildings will be of steel and concrete construction.

Steam Power Stations—Stone and Webster Engineering Corporation, constructing engineers, Boston, Mass., has issued an attractive booklet containing a partial list with full-page illustrations of the steam power stations designed and built by the firm.

Drills—The Terry Core Drill Co. has been consolidated with the McKiernan Drill Co. under the name of the McKiernan-Terry Drill Co. The new company, which has its offices at 115 Broadway, New York City, will continue to manufacture the various products of both companies.

Hexagonal Creosoted Paving Blocks.

—Another creosoting plant is to be built in Toledo, O. It is to be operated by Harry Jennison and A. G. Wright, and will be erected near the plant of the Skinner Bending Co., at Broadway and the Wabash tracks. The new plant will creosote paving blocks only. Jennison recently obtained a patent on a hexagon or six-sided block, which, when lain, will look like tile. A company will be incorporated in a few days to exploit the invention and build the plant, which will have three structures. One of the buildings will be 50 x 150 and will be used as a mill. Another will be 50 x 100 feet in size and will be the treating plant, while the third building will be a power plant. There will also be one working and three storage steel tanks, each having a capacity of 2,000 barrels. The wood to be used will be mostly northern pine, but tamarack and other soft woods as well as the softer hard woods, such as burr oak, are also to be utilized for the blocks. Twenty-two acres of land has been leased from the Wabash for the plant. This is the property that was bought by the road some years ago for a stock yard, but the scheme was never realized.

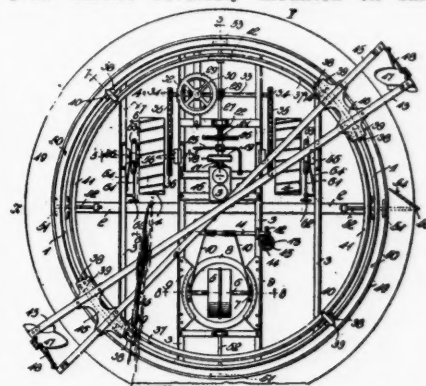
Wire-Cut-Lug Blocks—The Dunn Wire-Cut-Lug bricks are rapidly coming into favor, as shown by the fact that they were chosen by representatives of the National Paving Brick Manufacturers' Association in laying a model brick pavement in Erie, Pa., as a demonstration for the benefit of members of the American Society of Municipal Engineers during their recent convention. More than 100 cities now admit these bricks under their specifications. In a note on this subject in a recent issue the word "pressed," so familiar in referring to paving brick, somehow crept into the headline. Of course, the point is that the bricks are not repressed, but cut by wire, thus preserving the texture of the clay.

Pumping Engines—The Birdsboro Steel Foundry & Machine Company, Birdsboro, Pa., has been awarded the contract for pumping engines for use in the Water Department of Harrisburg, Pa. The installation consists of two complete units, independent of each other, each having a capacity of 1,000,000 gal. per day. One unit is to be driven by a direct connected gasoline engine, the other by electric motor. Each unit is interchangeable, except as to vertical of drive. The pumps are of the vertical triplex type, having plungers 8 3/4 in. in diameter and 12-in. stroke. The contract includes the pumps, piping and installation of the equipment. The pump business of this company has been increasing so rapidly that it has been found necessary to double the capacity of some departments connected with the pump manufacture, particularly chilled iron plungers, for the grinding of which a machine having a capacity 20 x 96 in. has recently been ordered.

Fire Engine Boiler Test—The Seneca Falls Engine and Supply Company, Seneca Falls, N. Y., has completed testing a Silsby fire engine which was rebuilt. The engine is the property of the village of Palmyra and has been in the company's shops here for six weeks. The new patented type of fire engine boiler designed by William Woehle was placed in the engine and several experts witnessed the test of the boiler last week. They pronounced it superior to any type of fire engine boiler on the market. Members of the company are gratified with the results. The engine will be shipped to Palmyra next week.

PATENT CLAIMS

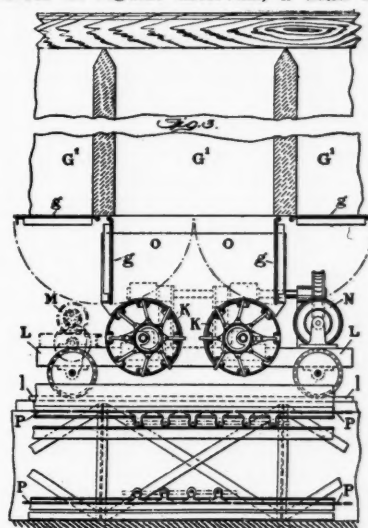
974,397. ROAD-GRADER. Victor Landholm, Westpoint, Neb. Serial No. 540,360. In a road grader, a supporting frame, a plow carrier revolvably mounted on said



frame, plows supported and operated by said carrier, a revolvably mounted dirt carrier adapted to receive the dirt thrown up by said plows and to discharge the same at a predetermined point, and means to operate said plows and dirt carrier at the proper rates of speed.

974,630. MEANS FOR CHARGING REFUSE DESTRUCTORS. Henry Norman Leask, Egremont, England. Serial No. 460,309.

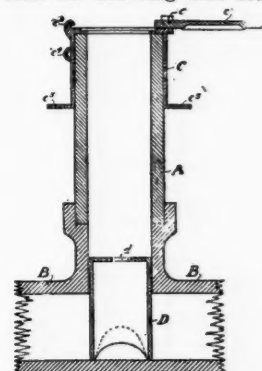
Feeding means of the class described consisting of an outer hollow drum having openings through the circumferential wall thereof at regular intervals, a dead shaft



upon which said drum is rotatably mounted and provided with eccentrics, a smaller drum rotatably disposed within the outer drum and engaging the eccentrics, and projections movably attached to the inner drum and extensible through the openings of the outer drum.

974,752. SEWER CONNECTION. Wilmer E. McCorquodale, Orange, Tex. Serial No. 520,104.

A sewer connection for houses and premises embracing a vertical outlet pipe, a cover or closure for the upper end of said pipe, means for securing and sealing said



closure to said pipe, a vertically movable cut-off detachably mounted in said pipe adapted to close the lower end of said pipe, and a sewer union for the lower end of said pipe adapted to seat said cut-off and form therewith a back water valve for the sewer.

THE WEEK'S CONTRACT NEWS

Relating to Municipal and Public Work—Street Improvements—Paving, Road Making, Cleaning and Sprinkling—Sewerage, Water Supply and Public Lighting—Fire Equipment and Supplies—Bridges and Concrete Work—Sanitation, Garbage and Waste Disposal—Police, Parks and Miscellaneous—Proposals and Awards

To be of value this matter must be printed in the number immediately following its receipt, which makes it impossible for us to verify it all. Our sources of information are believed to be reliable, but we cannot guarantee the correctness of all items. Parties in charge of proposed work are requested to send us information concerning it as early as possible; also corrections of any errors discovered.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
Louisiana.....	New Orleans.....	Nov. 18, 11 a.m.....	Constructing roads and walks at Jackson Barracks, La.....	G. B. Davis, Hibernia Bank Bldg.
Ohio.....	Cincinnati.....	Nov. 18, noon.....	Improvement change in River Road, Crosby twp., Spec. No. 87, also North Bend rd. from Harrison pike to Mt. Healthy line.	Fred M. Dreihls, Clk. Co. Comrs.
Nebraska.....	Lincoln.....	Nov. 18.....	Asphalt paving 17,500 sq. yds. in Dists. Nos. 113 to 186.....	Adna Dobson, City Engineer.
Nebraska.....	Norfolk.....	Nov. 18.....	Paving with brick or asphalt portions of B, C and 19th sts.....	Roscoe C. Ozman, City Clerk.
New Jersey.....	Roselle.....	Nov. 18, noon.....	Laying 770 lin. ft. bluestone sidewalks on Ninth ave.....	J. L. Bauer, Borough Engineer.
New York.....	Syracuse.....	Nov. 21.....	Lay, cement, asphalt or brick sidewalks on 2 sts. and 4 aves.....	George J. Metz, City Clerk.
Alabama.....	Montgomery.....	Nov. 21.....	Paving Clithral ave.....	A. R. Gilchrist, City Engineer.
Texas.....	Amarillo.....	Nov. 21, 3 p.m.....	Paving 7 sts., with brick, asphalt, bit., mac. or other material.....	Sam J. Brown, City Secretary.
Nebraska.....	Lincoln.....	Nov. 22, 2 p.m.....	Grading North 14th st.....	H. E. Wells, County Clerk.
Georgia.....	Dalton.....	Nov. 22, 3 p.m.....	Brick, wood block or other pavement, 28,000 sq. yds. gran. curb Bldg. Charles L. Webb gravel road, 10,672 ft. long in 2 townships	Paul B. Trammell, Mayor.
Indiana.....	Anderson.....	Nov. 22, 10 a.m.....	Grading North Fourteenth st.....	William T. Richards, County Aud.
Nebraska.....	Lincoln.....	Nov. 22, 2 p.m.....	Constructing vitrified brick or cement sidewalks.....	W. S. Scott, County Engineer.
Kansas.....	Chetopa.....	Nov. 22, 5 p.m.....	Bldg. curb and gutter, natural or artificial, etc., Bay st, 2d Ward.	A. R. Bell, City Clerk.
New York.....	St. George, S. I.....	Nov. 22, noon.....	Asphalt paving on concrete, laying sidewalks, regulating sts., etc.	George Cromwell, Boro. President.
New York.....	Brooklyn.....	Nov. 23, 11 a.m.....	Bldg. 33,000 sq. ft. concrete street crossings.....	Alfred E. Steers, Boro. President.
Louisiana.....	Crowley.....	Nov. 23.....	Imp. Comer rd. from Sharon ave. to Van Zandt rd., Sycam. Tp.	R. J. Boudreaux, City Clerk.
Ohio.....	Cincinnati.....	Nov. 25 noon.....	Macad. Main st., N.E., lay, granolithic sidewalks sundry sts.....	Fred Dreihls, Clk., Co. Comrs.
Virginia.....	Roanoke.....	Nov. 25, noon.....	Grading Granger road at Station 45, South Newburg Twp.....	F. L. Gibboney, City Engineer.
Ohio.....	Cleveland.....	Nov. 26, 11 a.m.....	Paving 980 lin. ft. of W. Broad st.; brick or other material.....	Frank R. Lander, County Surveyor.
Pennsylvania.....	Nanticoke.....	Dec. 3, 7 p.m.....	Bldg. 190,000 sq. ft. flagstone walks, also gutters to drain walks.	Judson Abbott, Chm. Street Com.
Ohio.....	Linden Heights.....	Dec. 5.....	Asphalt pav., Houston ave., and 5 sts., J. E. Carroll, City Engr	F. O. Howells, Village Clerk.
Minnesota.....	Crookston.....	Dec. 13.....		A. M. Childs, City Clerk.
SEWERAGE				
North Carolina.....	Ft. Caswell.....	Nov. 18.....	Constructing sewers and cisterns at post.....	Lt. R. O. Edwards, Constr. O. M.
Iowa.....	Fort Dodge.....	Nov. 18, 2.30 p.m.....	Bldg. ditch and drain in Drainage Dist. No. 79, Wash'tn Twp.	J. L. Hanrahan, County Auditor.
Virginia.....	Norfolk.....	Nov. 19.....	Furn. & install 3 elec.-driven cent. pumps. Colley ave. Pump Station, capacity 2,000, 3,000 and 4,000 gals. per minute.....	W. T. Brooke, City Engineer.
Georgia.....	Atlanta.....	Nov. 21, 11 a.m.....	Bldg. Proctor Creek disposal plant, minus sewage beds, cost \$105,200; former bids rejected.	R. M. Clayton, City Engineer.
Rhode Island.....	Providence.....	Nov. 21, 2 p.m.....	Furn. 1,500 ft. 15-in.; 9,000 ft. 12-in., 4,000 ft., 8-in., 10,000 ft., 6-in. pipe, 36 ft. 12x12; 75 ft. 12x8 and 1,800 ft. 12x6-in. branch pipes, bends, covers, etc.; 75 5x5'4" flagstones, 50 granite inlet curbstones for catch basins; 10,000 bbls. Portland and 1,600 bbls. natural cement, for various city depts.; W. F. Slade, Comr. Pub. Wks.	Henry N. Fletcher, Chm. Bd. C. & S.
New York.....	St. George, S. I.....	Nov. 22, noon.....	Constructing a sewer in Monroe ave.....	George Cromwell, Boro. President.
New York.....	Brooklyn.....	Nov. 23, 11 a.m.....	Constructing sewers in various streets.....	Alfred E. Steers, Boro. President.
Virginia.....	Roanoke.....	Nov. 23, noon.....	Bldg. sewer in Madison av., N.E., bet. 4th st. and Lick Run.....	W. L. Craft, City Clerk.
Illinois.....	Pekin.....	Nov. 23, 2 p.m.....	Bldg. 4.14 8 to 36-in. brick and tile pipe sewers, 98 manholes; 131 catch basins; outlet bulkhead, Dist. 2; also 8.15 miles 8 to 48-in. pipe; 190 manholes; 278 catch basins and outlet bulkhead in Dist. 3.....	R. P. Van Dusen, Secy. Bd. Lo. Imp.
New Jersey.....	South River.....	Nov. 28, 8 p.m.....	Bldg. 2 sections of sewer system: 7 miles t. c. pipe sewer, 15-in. and less and appurtenances; disposal works, inc. c. i. pipe, river crossing, pump house, disposal works and pip. to these.	Charles Anderson, Boro. Clerk.
Ohio.....	Piqua.....	Nov. 28.....	Bldg. sewers in por. of Vine and Lincoln sts. & Madison ave.....	T. D. Clay, Dir. Pub. Service.
New Jersey.....	Elizabeth.....	Dec. 1, 8 p.m.....	Laying 1343 lin. ft. 6, 8 and 10 in. pipe, etc.....	N. K. Thompson, Street Commr.
Kentucky.....	Louisville.....	Dec. 2, noon.....	Bldg. 8th and St. Catherine St. sewers, Contract No. 75: 3,250 ft. 36, 42 and 48-in. concrete sewer, inc. 1,150 cu. yds. concrete, excava. 12-18 ft. deep; H. P. Eddy, Cons. Engr., 14 Beacon st., Boston, Mass.	P. L. Atherton, Chm. Sewer Comr.
South Carolina.....	Timmons ville.....	Dec. 7.....	Bldg. 6,000 ft. lateral drains, 12-36-in. brick, concrete and t. c., catch basins, etc. J. N. Johnston, Florence, Engr.....	R. C. Collins, City Clerk.
WATER SUPPLY				
Michigan.....	Saginaw.....	Nov. 18, 7:30 p.m.....	Bldg. new intake and pump well at east side pumping station.....	Rolla W. Roberts, City Engineer.
Pennsylvania.....	Brookville.....	Nov. 19, 6 p.m.....	Furn. mat. and bldg. dam and rein. conc. settling basins: 2150 cu. yds. earth and 30 cu. yds. rock excav., 1510 yds. embank.; 208 yds. plain, 490 yds. rubble and 526 yds. rein conc. 340 sq. yds. slope paving, 230 ft. 12-in. c.i. pipe; \$10,000 bond.....	Geo. W. Heber, Secy., Water Co.
Tennessee.....	Pittsburg Land'g	Nov. 21.....	Installing water supply at Shiloh National Cemetery.....	Maj. G. G. Bailey, Ch.Q.M., U.S.A., Candler Bldg., Atlanta, Ga.
Rhode Island.....	Providence.....	Nov. 21, 2 p.m.....	Furn. hydrants, water gates, 59,000 lbs. 3/4-in. to 1 1/4-in. lead pipe; 40,000 lbs. pig lead, delivered early in 1911.....	Henry M. Fletcher, Mayor.
Pennsylvania.....	Pittsburg.....	Nov. 24, 10 a.m.....	Laying c.i. hub & spigot pipe for No. Side City Home fire system	N. S. Sprague, City Engineer.
Minnesota.....	Minneapolis.....	Nov. 25, 7:30 p.m.....	Furnishing one or two elec.-driven cent. pumps; Andrew Rinker, City Engineer.....	H. N. Knott, City Clerk.
Ohio.....	Coshocton.....	Nov. 26.....	Installing eleven 10-in. driven wells and connecting with present 20-in. suction line by laying 220 ft. 20-in. and 316 ft. 6-in. c. i. pipe, valves, etc.; L. E. Chapin, Engr., Canton.....	Farley Conerty, Dir. Pub. Service.
North Dakota.....	Rugby.....	Nov. 27.....	Furnishing water meters for three years ending Dec. 31, 1913; prices to be on single meters and dozen lots of 5-8, 3-4, 1-4 and 1-2 inch.....	Henry Nelson, City Auditor.
New Jersey.....	South River.....	Nov. 28, 8 p.m.....	Bldg. water works and sewer system; W. W. Young, Con. Engr., N. Y. City, Philadelphia and Bordentown.....	Joseph Mark, Mayor.
Arizona.....	Sacaton.....	Dec. 6.....	Furnishing and erecting tank and tower at Pima Indian School	James B. Alexander, Supt. Indian S.
South Carolina.....	Timmons ville.....	Dec. 7.....	Furn. material and bldg. water works, etc.; J. N. Johnston, C. E. Florence.....	J. E. Patterson, Chm. Bd. Pub. Wks.
Massachusetts.....	Pittsfield.....	Dec. 12, 2 p.m.....	Bldg. dam and reservoir, 7 mi. s. e. in town of Washington: 47,000 cu. yds. msry., 85,000 cu. yds. earth and 9,600 rock excav.; 45 acres clearing and grubbing, 4,000 ft. 12, 20, 24-in. vit. pipe, 1,300 cu. yds. paving.....	A. B. Farnham, Engr. B. P. Wks.
Washington.....	Seattle.....	Dec. 13.....	Sale by city of pumps, boilers, etc. at various pump. stations.....	
BRIDGES				
Maryland.....	Westernport.....	Nov. 19, 2 p.m.....	Bldg. bridge over George's Creek.....	William Harvey, City Engineer.
Ohio.....	Defiance.....	Nov. 21.....	Furn. iron for completion of one span of Frances Street Bridge	Board of County Commissioners.
New York.....	Albany.....	Nov. 22, noon.....	Bldg. bridge over Erie Canal and canal improv., cost \$27,000.	F. C. Stevens, Supt. State Pub. Wks.
Oregon.....	Portland.....	Dec. 15, 2 p.m.....	Erecting Lost River bridge 10 miles southeast of Klamath Falls	U. S. Reclamation Service.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
LIGHTING AND POWER				
Texas.....	Corpus Christi...	Nov. 18.....	Applications for gas franchises, several pending.....	Mayor and City Council.
Ohio.....	Cleveland.....	Nov. 18, noon.....	Furn. and install. steam and electric generat. unit, switchboard and appliances at Colony Farm, Warrensville for Serv. Quad.	F. G. Hogen, Dir. Pub. Safety.
Montana.....	Missoula.....	Nov. 20.....	Constr. \$45,000 power plant on Rock Creek at Stevensville..	E. S. Dorman, Ch. Engr., Rock Creek Power Company.
New Jersey.....	South River.....	Nov. 28, 8 p.m.....	Bldg. elec. light, power pump, plant and transmission line....	Charles Anderson, Borough Clerk.
Iowa.....	Marshalltown.....	Nov. 28, noon.....	Install. of machinery and water wheels for dev. water power.	O. L. Ingledue, Mayor.
North Dakota.....	Carrington.....	Nov. 28.....	Installing lighting fixtures at County Court House, being erected	Board of County Commissioners.
Manitoba, Can.....	Winnipeg.....	Dec. 1.....	Furnishing poles and line supplies.....	M. Peterson, Sec'y. Bd. Control.
California.....	Newport.....	Dec. 12, 7 p.m.....	Franchise to erect poles, etc., in sts. and alleys, and string wire and cables for elec. energy for light, heat and power.....	L. S. Wilkinson, City Clerk.
FIRE EQUIPMENT				
Rhode Island...	Providence.....	Nov. 21, 2 p.m.....	Furn. motor-driven comb. wagon, also hook-and-ladder truck..	Mayor Henry Fletcher, Ch. B.C. & S.
Connecticut.....	Hartford.....	Nov. 21, 11 a.m.....	Furn. 1,000 ft. 2.5-in. knit. doubt jacket, rub-lined fire hose....	Jos. Butts, Sec'y. Bd. Con. & Sup.
New Jersey.....	Jersey City.....	Nov. 23.....	Furn. auto comb. engine and hose wagon; 1st size steam engine	Fire Board.
New York.....	Schenectady.....	Nov. 23, 2.30 p.m.....	Furn. 1600 ft. fire hose.....	H. F. Miller, Secy., Bd. C. & Supply
Minnesota.....	Duluth.....	Nov. 25, 3 p.m.....	Furn. 2,000 ft. 2.5-in. steam fire engine hose, coupled.....	John McCall, Sec'y. Fire Comrs.
Montana.....	Helena.....	Dec. 17.....	Fur. 80 hp. com. auto fire wag., cap. 2,000 ft. hose, 35 gal. tank..	J. A. Mattson, City Clerk.
MISCELLANEOUS				
Massachusetts...	Boston.....	Nov. 18, 2 p.m.....	Dredging extension to anchorage basin on southerly side of South Boston near Mosquito Fleet Yacht Club; dredge and dump at sea 118,000 cu. yds. to enlarge anchorage 6 ft. and entrance channel 7 ft.....	F. W. Hodgdon, Ch. Engr., Har. Bd.
Pennsylvania...	Hazleton.....	Nov. 18, 4 p.m.....	Furnishing street signs.....	B. E. Youngman, City Engineer.
Utah.....	Salt Lake City...	Nov. 21, 10 a.m.....	Erecting Infirmary Hospital bldg.; J. A. Headlund, Architect.	M. Z. Witcher, County Clerk.
Michigan.....	Bay City.....	Nov. 21.....	Erecting detention house; Clark & Munger, Architects.	Board of Health.
Georgia.....	Tifton.....	Nov. 22.....	Erecting 3-story rein. conc. County Court House; cost \$54,000.	Board of County Commissioners.
Indiana.....	Michigan City...	Nov. 22, 10 a.m.....	Bldg. of sea walls or docks, cash or cert. check, \$100.....	F. C. Miller, Chm. Bd. Pub. Wks.
New York.....	New York.....	Nov. 22, noon.....	Furnishing all labor and material for the removal of snow and ice during season of 1910-11 in Manhattan, B'klyn and Bronx	Wm. H. Edwards, Comr. St. Clean.
N. Brunsw. Can.	Lorneville.....	Nov. 23.....	Bldg. extension to breakwater.....	Sec'y. D. P. Wks. Ottawa, Can.
Ohio.....	Ashland.....	Nov. 27.....	Erecting \$70,000 City Hospital; F. L. Packard, Architect....	Edgar Koehl, City Clerk.
New York.....	Troy.....	Dec. 1, 5 p.m.....	Competitive plans for new jail workhouse & sheriff's residence..	Roy H. Palmer, Clk. County Comrs.
Washington.....	Tacoma.....	Dec. 1.....	Furnishing design for municipal dock building.....	Owen Woods, Comr. Pub. Works.
Virginia.....	Richmond.....	Dec. 2, 4 p.m.....	Plans, detail drawings, etc., for bldg. wharf rein. concrete bulkhead on James River; \$500 cert. check.....	Charles E. Bolling, City Engr.

STREET IMPROVEMENTS

Mobile, Ala.—County has voted \$500,000 good road bonds.

Fort Smith, Ark.—Cost of opening South 7th and 8th sts. has been estimated at \$65,000 each.—Alderman Pantet, Chairman Special Committee.

Bakersfield, Cal.—Council has asked for bids for furnishing 10 and 12-ton steam road roller.

Los Angeles, Cal.—Supervisors have rejected all bids for building portion of Covina-Lordsburg road through San Dimas; new bids have been asked.

Los Angeles, Cal.—Council's Streets and Boulevards Committee has joined City Engineer and Board of Public Works in approving the plan to drive public traffic tunnel through hill along continuation of Hill st. from 1st to Temple.

Oakland, Cal.—Street Committee is considering widening of 13th st.

San Jose, Cal.—Council is considering improvement of Fifth and Second Sts., plans will be prepared for improving Vine St. and intersections of Vine and San Carlos Sts.

Stockton, Cal.—City Engineer R. C. Tumulty has estimated cost of proposed street improvements at \$290,609.96; plans prepared; bond election will be called.

Denver, Col.—Boulevard will be constructed along west side of Cherry Creek, from Broadway to Colfax ave.

Washington, D. C.—Inquiry has been made from South American import firm for 500,000 meters of asphalt paving blocks of 12 English in. by 4 x 4; instructions and guarantee of a competent engineer about pressure and resistance of the blocks must accompany the samples, together with lowest prices; shipments are to be made in lots of 100,000 meters; information desired regarding this matter as soon as possible. Address No. 5753, Bureau of Manufactures.

Washington, D. C.—American Consular Officer in Latin-American country has stated that business man desires prices and machinery for building and upkeep of roads, latter especially referring to tarring process. Address No. 5739, Bureau of Manufactures.

St. Augustine, Fla.—City is considering purchase of steam road roller.

St. Augustine, Fla.—Council is considering paving of Bay st. with asphalt.

La Grange, Ga.—Troup County has voted \$250,000 road bonds.

Macon, Ga.—City is considering paving of 1st, Cherry and Mulberry sts. and Georgia and Hardeman aves.

Chicago, Ill.—Board of Local Improvements is considering paving of Cottage Grove ave.

East St. Louis, Ill.—Bids will soon be received by Board of Local Improvements for concrete and gravel pavement on Gray blvd. and Wimmer pl. and vitrified brick paving, on concrete foundation, on 18th, Alexander and 20th sts.; cost \$85,000; City

Engineer W. J. Crocken has completed plans for paving Ridge ave. with creosote blocks or brick; cost, \$16,000; also is preparing estimate for paving State st. to city limits with vitrified brick and concrete; cost, about \$250,000.

Maywood, Ill.—Village is considering laying of one-half mile of brick paving on Sixth St. R. E. Williams, 76 La Salle St., Chicago, Engineer; John Saffel, President.

Melrose Park, Ill.—Village is considering laying about 2 miles of sidewalks. R. H. Williams, 76 La Salle St., Chicago, Engineer; J. C. Wolf, President.

McHenry, Ill.—Village has decided to macadamize number of streets.

Peoria, Ill.—Board of Local Improvements will approve ordinance for paving portion of Elizabeth ave. with brick.

Springfield, Ill.—City will take new estimates about Jan. 1 for paving 14th st., Jackson and Laurel sts. with brick; cost, about \$31,000.

Laporte, Ind.—Plans are being prepared and bids will soon be asked by Board of Public Works for paving Washington and State sts. with brick.—Ezra Shoecraft, City Engineer.

Hutchinson, Kan.—County Commissioners are considering construction of sand clay road in North Hayes township.

Alexandria, La.—Grand Jury is favorable to \$350,000 bond issue for roads and bridges.

Baltimore, Md.—Citizens have voted \$1,000,000 bonds for covering Jones Falls with boulevard; Francis K. Carey, Josiah Pennington and C. W. Hendrick will be members of committee to carry out work.

Pikesville, Md.—Cityco Realty Co., J. J. Hurst, 1201 Calvert Bldg., Baltimore, President, will receive bids through Reding & Howard, 11 East Lexington st., Baltimore, for construction of cement sidewalks in connection with development of East Sudbrook Park.

Malden, Mass.—Plans have been ordered for laying out of Middlesex Court; Street and Water Commission has decided to lay out and build Edmund st.

Benton Harbor, Mich.—Berrien County has voted to construct good roads; over \$50,000 will be expended.

Bessemer, Mich.—Gogebic County will expend \$33,000 this year on good road construction.

Belzoni, Miss.—Walter G. Kirkpatrick, Jackson, is preparing plans for about 3 miles of concrete sidewalks; contracts will be let in about 3 weeks.—Jeff. Clark, Town Clerk.

Elizabeth, N. J.—Council has ordered grading, curbing and flagging of South Park St.

Orange, N. J.—Street Committee will advertise for bids for improvement of Vose ave.

Las Cruces, N. M.—Board of Trustees has ordered opening of two new streets.

Syracuse, N. Y.—Board of Supervisors has decided to construct State highway through villages of Eastwood and East Syracuse.

Tuckahoe, N. Y.—Village plans to brick Main st.—Daniel Myers, Street Commissioner.

Watertown, N. Y.—City is planning to expend nearly \$40,000 next year for new works and improvements on streets.

Yonkers, N. Y.—Board of Contract and Supply, Secretary Mahoney, will ask for bids for widening Warburton ave.

Elizabeth City, N. C.—Board of Aldermen is considering paving of streets of town.

Fargo, N. D.—City Engineer Frank L. Anders has prepared general scheme for paving residence streets with brick and asphalt.

Akron, O.—Council has repassed 18 ordinances for street improvements involving \$160,000; Council has decided to pave portions of High, Yale and Barges sts.

Canton, O.—City proposes to pave with vitr. paving block the following streets: 8th st., \$6,609; E. 8th st., \$24,477; Gibbs st., \$22,924, and Marion st., \$17,202.—Ray F. Herbert, Director of Public Service.

Greenville, O.—Council has decided to sewer and macadamize West 3d st. and south end of Race st.—L. N. Jackson, City Engineer.

Portsmouth, O.—Council is considering paving of all principal alleys.

Wellsville, O.—Council has approved plans for paving Virgin alley.

Pawhuska, Okla.—City will pave 20 blocks in business district.

Forest Grove, Ore.—Installation of hard surface paving on number of streets in business district is being urged.

Chester, Pa.—Residents are urging paving of East 8th st.

Dover, Pa.—Funds derived from license fees are to be used for borough highways.

Lebanon, Pa.—Citizens defeated proposed loan for paving and sewers.

McKeesport, Pa.—City Engineer J. Monroe Smith, People's Bank Bldg., will take bids about March 1 for repaving, grading and curbing with repressed block brick, on concrete foundation, 5th ave.; cost, about \$50,000; also four other streets with same material, at cost of about \$20,000.

Norwood, Pa.—Citizens have voted \$50,000 loan for improvement of streets and extension of sewerage system.

Pittsburg, Pa.—Citizens have voted \$1,410,000 bonds for the city's share of cost of improvements as follows: Highways on north side and west end, affected by floods, \$400,000; Hamilton ave., \$300,000; W. Carson st., \$100,000; S. 18th st., \$60,000; Warrington ave., \$80,000; Corliss st., \$150,000; Atlantic ave., \$45,000; 2d ave., \$50,000; Chartiers st., \$5,000; Webster ave., \$55,000; Kirkpatrick st., \$50,000; 2d ave. and Try st., including grade crossing, \$115,000.

Pittsburg, Pa.—County Commissioners are considering construction of boulevard from Grandview ave. and Locust st. to Carson st. and Brownsville ave.

Wyomissing, Pa.—Borough has voted \$10,000 bonds for general street improvements.

Dallas, Tex.—Bids will be received Nov. 21 for \$350,000 street improvement bonds.—J. H. Ardrey, City Treasurer.

Merkel, Tex.—Precinct No. 2 has defeated proposed \$100,000 road bond issue.

Richfield, Utah.—County Commissioner of Sevier County is considering building main road through county.

Front Royal, Va.—County has defeated proposed \$30,000 bond issue for good roads.

Aberdeen, Wash.—New bids will be asked for improving Hume st.; Council has passed resolution for paving Broadway, cost, \$13,000, and Main st., \$3,000.

Dayton, Wash.—Council has estimated cost of proposed street improvements at \$15,000 to \$20,000.

Seattle, Wash.—Board of Works has made following estimates: Improvement of North and West 76th sts., \$13,800; grading and curbing 8th ave. N. W., \$13,100; sidewalk on 12th ave. N. W., \$9,400.

Spokane, Wash.—Council is considering following street improvements: Grading, curbing, parking and sidewalk of Jefferson st. from Cora to Carlisle ave., estimated cost \$11,880; sidewalk on Sprague ave., Napa to Sprague ave., \$2,600; paving with granitoid concrete McClellan st., Pacific ave. to 2d ave., \$2,940; sidewalk on Pacific ave., McClellan to Bernard st., \$350; grading, curbing, parking and sidewalk 23d ave., Park drive to Bernard st., \$3,000; grading, curbing, parking and sidewalk 2d ave., Helena to Hogan st., \$1,600; Elm st., Sinto ave. to Boone ave., \$2,380; paving with asphalt macadam, Wall st., Garland ave. to north city limits at Francis ave., \$52,000; grading, parking, curbing and sidewalk Cedar st., Carlisle to Montgomery ave., \$1,050.

Spokane, Wash.—Kiernan-Lawyer Land Co. is considering entire replat of Southeast blvd. preparatory to having it paved.

CONTRACTS AWARDED

Birmingham, Ala.—To Dunn & Lallande Bros., Birmingham, for 10,000 sq. yds. of asphalt binder macadam; to the E. W. Jordan Contracting Co. of Birmingham, for 1,500 sq. yds. macadam.

Florence, Ala.—To J. H. Angel & Co., for building sidewalks on Cypress Hills road.

Montgomery, Ala.—Council has decided to pave Madison Ave.; contract to Southern Bitulithic Co.

Little Rock, Ark.—To E. J. Wellerstrom, Chicago, Ill., to pave Main st., Free bridge to 8th st., with creosoted wood block; Ayer & Lord Tie Co., Chicago, will furnish block, which will be made at plant at Argenta.

Riverside, Cal.—To Shull-Tucker Co. for macadamizing Pepper st., \$9,789.

San Francisco, Cal.—Laying asphalt pavement at Presidio of San Francisco, to Flinn & Treacy, \$9,900.

Denver, Col.—Work in South Denver Improvement Dist. No. 7, including grading and concrete curb and gutter, to J. Fred Roberts, \$40,980.70; other bidders: Municipal Construction Co., \$41,353.40; Gaffy & Keefe Construction Co., \$41,879.50; Denver & Pueblo Construction Co., \$44,230.20, and Dillon Stone Co., \$57,069.09.

Chicago, Ill.—Board of Local Improvements has let contracts for street improvements to following contractors: H. F. Larsen, 140 La Salle st.; General Cement Construction Co., 160 Washington st.; Bairstow Supply Co., 6084 Ridge ave.; G. Kehi & Son Co., 1224 N. Campbell ave.; Demling & Wendt, 84 La Salle st.; P. F. Biesen, 145 La Salle st.; Shagard Concrete Construction Co., 4024 W. North st. and Albert Groff, 70 La Salle st.

Rushville, Ind.—Four new gravel roads, Leisure road contract, between Posey and Ripley townships, to J. F. Price, \$9,700; the Offutt road, in Posey township, to Wilk & Co., city, \$11,992; Walker road, in Ripley township, also to Wilk & Co., \$7,908; to Amos W. Stevens, George road, in Noble township, \$19,240.

Crowley, La.—To De Jersey & Barnard, Jennings, construct 33,000 sq. ft. concrete street crossings, 28c. per sq. ft. for crossings and 14c. per sq. ft. for approaches from side streets to crossings.—R. J. Boudreaux, City Clerk.

Asbury Park, N. J.—Paving Cookman ave., Grand ave. to Kingsley st., with creosoted wood paving blocks, to U. S. Wood Preserving Co., New York City, \$2,42½ per sq. yd.

Freehold, N. J.—Building Young Orchard Hill road to Jacob P. Stout, \$2,148.70; building bulkhead and raising road at Keansburg to John Carr, \$1,909.05.

Lambertville, N. J.—Erecting retaining wall along portion of county road, to Treftz & Bailey.

Newark, N. J.—Building short stretch of new road near city, to Horrigan Contracting Co., \$1,680.

Albany, N. Y.—Improvement of Myrtle ave. to T. Henry Dummery, \$12,218.30.

Bronxville, N. Y.—Grading, paving and placing of sewers on Governors and Avon roads in Sagamore, to Bellew & Merritt;

grading and paving, \$10,687.11, and sewer, \$5,800; other bidders were: Nicholas Fagnani, grading and paving, \$18,012.11, and sewer, \$3,564; Pasquale Cestone, grading and paving, \$15,316.35, and sewer, \$4,450.

Pomeroy, O.—Constructing road .5 mile long in Rutland Township, to George E. Bowers, Middleport, \$4,600.

Portland, Ore.—Paving East Madison st. with bitulithic, to Warren Construction Co., \$19,622.

Logan, Utah.—Paving in District No. 18 to Leroy F. Hill.

Fuyaiup, Wash.—To Warren Construction Co., for paving Poplar st., \$8,849.27.

Seattle, Wash.—Laying concrete walks on Jackson ave., to Hans Pederson, Alaska Bldg., \$12,124.40.

Spokane, Wash.—Street improvements, to Inland Engineering Co., Arthur st., 28th to 29th ave., \$5,710, estimate \$5,460; to same company, Division st., 8th to 9th ave., \$1,260, estimate \$1,100; to Naylor & Norlin Co., Jefferson st., Indiana to Carlisle ave., \$5,324, estimate \$5,800; to John Fife, 13th ave., Crestline to Napa st., \$4,984, estimate \$5,200.

BIDS RECEIVED

Los Angeles, Cal.—Grading a portion of the La Canada-Verdugo road: W. K. Peasley, \$13,883.23; T. D. Donegan, \$14,200; A. C. St. John, \$15,000; grading and laying rock on Central ave. in Glendale section, F. F. Prendergast, section No. 1, grading, \$7,810; 4,472 tons of rock, \$1.40 a ton; section No. 2, grading, \$1,160, 1,980 tons of rock, \$1.40 a ton; A. C. St. John, section No. 1, \$5,600, and rock, \$1.35 a ton; section 2, \$1,500 and rock, \$1.50; W. K. Peasley, No. 1, \$4,723.59 and rock at \$1.65; section 2, \$477.16 and \$1.65 for rock.

Council Bluffs, Ia.—Three sections of sidewalk, 58,185 sq. ft.: Ferguson Brothers, \$12,764.40; Peter Nelson, 12c. per sq. ft. on one \$2,000 section, while E. A. Wickham & Co. bid 12½c. on entire job.

Rome, N. Y.—Repaving West Willett st., between James and Washington sts., Warren Bros. Co., 59 Temple pl., Boston, Mass., lowest bidder, \$1.70 per sq. yd.

Providence, R. I.—By State Board of Public Roads for three stretches of road in East Providence, West Greenwich and Exeter: East Providence, Joseph McCormick, \$4,312; West Greenwich, John Bristow, \$4,624.40; Amos D. Bridges Sons, \$5,539.75; Lane Construction Corporation, \$5,700; Exeter, Lane Construction Corporation, \$6,360, and Amos D. Bridges Sons, \$5,771.06.

Spokane, Wash.—Grading, curbing, sidewalk and parking Cleveland ave., estimate \$7,400, Naylor and Korlin, lowest of five bidders, \$6,689; same work on Arthur st., estimate \$5,460, Inland Engineering Co., lowest of two bidders, \$5,710; same work on Division st., estimate \$1,100, Inland Engineering Co., lowest of two bidders, \$1,260; same work on Jefferson st., estimate \$5,800, Naylor & Norlin, lowest of four bidders, \$5,324; same work on 13th ave., estimate \$5,200, John Fife, lowest of four bidders, \$4,984.

Racine, Wis.—Paving, lowest bidders: 9th st., with brick, N. F. Reichert, \$2.05 per sq. yd.; Lake st., with brick, R. R. Birdsall, city, \$2.05 per sq. yd.

SEWERAGE

Stockton, Cal.—City Engineer R. C. Tumulty has estimated cost of proposed rain water sewer system at \$77,000 and sanitary sewer system at \$40,000; plans prepared; bond election will be called.

San Francisco, Cal.—Board of Supervisors has authorized construction of sewers in section C-2 of North Point main sewer system; cost \$85,000.

Waterbury, Conn.—Board of Aldermen is considering issuance of \$100,000 bonds to construct trunk sewer in Naugatuck River.

Americus, Ga.—Citizens defeated proposed bond issue of sewerage extension; new election will be called.

Atlanta, Ga.—All bids have been rejected by Bond Commission and Sewer Committee for Proctor Creek disposal plant; lowest bidder, Interstate Construction Co., \$121,276.25; new bids will be received Nov. 21.

Shelbyville, Ind.—Council has decided to readvertise for bids for completion of sanitary sewer system, the three bids submitted having been rejected because they were above the estimate made on the work.

South Bend, Ind.—Board of Local Improvements is considering proposed sewer improvements in north end.—Wm. S. Moore, City Engineer.

Kalamazoo, Mich.—Citizens have voted \$20,000 bonds for sewage pumping station and sanitary sewer in so-called sanitary zone.

Springfield, Mo.—Citizens will vote Nov. 21 on \$100,000 bonds for extension of sewer

system and \$100,000 for septic tanks at sewer outlets.

Lincoln, Neb.—Plans have been prepared by City Engineer Adna Dobson for storm sewers, in various streets, including about 1,300 ft. of 7 x 9 and 1,400 ft. 4 x 5 concrete pipe, 4,000 ft. 36-in. vitrified pipe and 1,000 ft. 40 x 60 concrete pipe; cost, \$50,000.—Roscoe Ozman, City Clerk.

Walthill, Neb.—Preliminary plans are being prepared by Engineers Smith & Finley, American bldg., Sioux City, Ia., for vitrified pipe sanitary sewers.—Cecil Baughlin, City Clerk.

Caldwell, N. J.—Action has been taken by Borough Council looking toward sewerage for that borough.

Rochester, N. Y.—Council has adopted ordinance appropriating \$500,000 for construction of intercepting sewers.

Syracuse, N. Y.—Health Officer D. M. Totman is urging construction of sewers in one of districts where typhoid is most prevalent.

Akron, O.—Council has adopted report of Finance Committee to appropriate \$60,000 for building main truck sewer from Lock 16 to Cuyahoga River.

Huron, O.—Village has awarded \$3,000 sewer bond issue to Berlin Heights Banking Co., Berlin Heights.

Reynoldsburg, O.—Village Council has passed ordinance for the construction of sewer in Broad st.—W. I. Hempstead, President.

Enid, Okla.—Bids will be readvertised for construction of Elm st. sewer.

Lebanon, Pa.—Citizens have voted \$110,000 bonds for installation of house sewer system.

Reading, Pa.—Although loan bill failed to pass, city will likely spend \$50,000 for sewers next year.

McKeesport, Pa.—Leo Hudson of New York has been engaged by City Engineer Smith to assist him in preparing plans for the comprehensive sewerage system as demanded by State.

Norwood, Pa.—Citizens have voted \$50,000 loan for extension of sewerage system and improvement of streets.

Pittsburg, Pa.—Citizens have voted \$570,000 sewer bonds; reconstruction of sewer system in Try st., \$145,000; Soho Run drainage basins, \$95,000; construction of relief sewers in 33d st., \$125,000; Negley Run drainage basins, \$205,000.

South Bethlehem, Pa.—Councilmen have inspected house sewage disposal plant in Reading to get ideas.

Wickford, R. I.—Town will ask Legislature for permission to install sewer and water system at cost of \$35,000.—Jos. G. Reynolds, Treasurer.

Bryan, Tex.—City will construct sewer system, including two miles of 8, 10 and 12-in. pipe, sewer purification plant, etc.; vit. sewer pipe will be used; work under supervision of A. B. Carson, City Engineer; cost \$12,500.

Dallas, Tex.—Bids will be received Nov. 21 for \$100,000 sanitary sewer bonds.—J. H. Ardrey, City Treasurer.

Dallas, Tex.—Board of Municipal Commissioners has decided to construct sewers between Houston and Texas Central Railway, Ervay and Live Oak sts. and Ross ave.; cost \$20,000.

Dallas, Tex.—City Commissioners have ordered bids for laying storm sewer in Holmes st. at cost of \$3,822.

El Paso, Tex.—Bids have been rejected for construction of Main st. storm sewer.—C. E. Kelly, Mayor.

Spokane, Wash.—Council is considering construction of sewer on 16th ave. from Perry st. to Madelia st., estimated cost \$2,768.50; from Madelia to Crestline, \$6,878; plans prepared.

Prescott, Wis.—Citizens have voted to install complete sewer system.

Laramie, Wyo.—Citizens have voted \$15,000 sewer bonds.

Kincardine, Ont., Can.—Ratepayers will vote in January on a by-law to spend \$7,000 on septic tank and trunk sewer.

Vancouver, B. C., Can.—Ratepayers will vote Jan. 11 on \$500,000 for sewer extension.

CONTRACTS AWARDED

Tuscaloosa, Ala.—To Tuscaloosa Concrete and Supply Co. at \$6,779.59 to construct 13,755 lin. ft. 8-in. sanitary sewers, with 27 manholes and 8 flush tanks; may increase quantities to 37,105 ft. of pipe, 69 manholes and 26 flush tanks; to McCartin Construction Co., Birmingham, Ala., to construct following storm water sewers: 352 ft. of 20-in. pipe, 412½ ft. of 24-in., 357½ ft. of 30-in. and 771 ft. of 36-in., including 5 manholes and 12 catch basins; \$4,042.94.—W. B. Nicol, City Engineer.

Oakland, Cal.—Building sewer on 14th ave., to Scott & Foley, \$13,597.

San Jose, Cal.—Furnishing manhole covers to Anderson-Barngroner Co., \$8.90, including "dustpans."

Eastman, Ga.—Construction of about 9 miles of 8 to 12-in. terra cotta pipe sewers

with necessary manholes and flush tanks, from plans of Arthur Pew, 619 Temple Court Bldg., Atlanta, to F. M. Benner, Marion, Ind., \$17,022; other bidders: Municipal Engineering and Construction Co., Chattanooga, Tenn., \$21,202; Sullivan & Long, Bessemer, Ala., \$21,698; I. C. Mishler, Chattanooga, Tenn., \$22,026; P. J. Curran, Knoxville, Tenn., \$22,068; Mann & Garvey, Knoxville, Tenn., \$22,116; Geo. H. Crafts & Co., Dublin, \$22,184; Charleston Engineering and Construction Co., Charleston, S. C., \$22,337; Noll Construction Co., Chattanooga, Tenn., \$22,937; John R. Jeffrey, Elberon, N. J., \$25,323; J. H. Hargrove & Son, city, \$25,998; Geo. H. Palmer, Opelika, Ala., \$15,912; Dysard Construction Co., Atlanta, \$17,998; Abee Bros. & Hart, Hickory, N. C., \$18,102; Edwards Construction Co., Hickory, N. C., \$18,603; Bryan & Co., Jacksonville, Fla., \$18,652; J. D. Whittey & Co., Mobile, Ala., \$19,553; J. D. Cranford & Co., Macon, \$20,397; Carolina Construction Co., Florence, S. C., \$19,990; M. P. Flynn & Co., Chattanooga, Tenn., \$20,870; Newman Sewer Construction Co., Evansville, Ind., \$24,925.

Eastman, Ga.—To F. M. Benner & Co., Marion, Ind., to construct $8\frac{1}{2}$ miles of sanitary sewer, \$17,022, not including construction of the two plants for purifying sewage.—Arthur Pew, Atlanta, Consulting and Supervising Engineer.

Boston, Mass.—Cleaning sewers, to Richard A. Nagel; Canal st., \$676.71 and \$248.93; Huntington ave., \$332 and \$180.

Cadillac, Mich.—Excavation, concrete wells and building, pumps, piping, etc., for sewage disposal plant, all bids rejected; city will construct its own plant; to Ft. Wayne Electric Co., Fort Wayne, Ind., for electric work, including motors and all other equipment, \$1,480.

Caro, Mich.—Constructing approximately 10,055 lin. ft. 8 to 15-in. sewer, manholes and flush tanks from plans of Riggs & Sherman Co., Engrs., The Nasby, Toledo, O., to Jas. W. Collins, Flint, \$7,392; other bidders: Louis Jagnaw Jackson, \$8,894; W. N. Sager, Saginaw, \$9,046; Geo. C. Penney, Toledo, \$9,075; Vanderweele Bros., Grand Rapids, \$9,252; E. M. Scheflow, \$10,081; J. T. Lynch, Flint, \$10,731; Peter Peterson and Nick Maker, Bay City, \$10,826; Jos. Walton, Clerk, Village Trustees.

Albert Lea, Minn.—To Illstrup & Olsen, Minneapolis, for constructing a lateral sewer on St. Mary's, Adams, Euclid and other streets, \$5,799.

South Amboy, N. J.—Construction of Contract 2, portion of sewer system, from plans of S. J. Mason, 102 Smith st., Perth Amboy, to P. J. Monaghan, city; 100 cu. yds. concrete, \$6; 1,000 ft. 15-in. clay pipe sewer, 89c.; 2,000 ft. 12-in., 75c.; 2,000 ft. 10-in., 73c.; and 25,000 ft. 8-in., all clay pipe sewer, 62c.; 200 manholes, each, \$29; 20 flush tanks, each, \$50; total, \$26,750. Totals of other bids: Johan Jensen, Perth Amboy, \$29,050; Cantrell Constr. Co., Philadelphia, Pa., \$33,440; Quinlan & Fallon, South Amboy, \$37,000; Liddle & Pfeiffer, Perth Amboy, \$40,575; Fusco Constr. Co., Newark, \$43,720; Jos. B. O'Rourke, Boston, Mass., \$49,750.

Fairport, N. Y.—Sewers in South Main and Park sts., to Wagner & Daucey, East Rochester.

Lestershire, N. Y.—For West Main st. sewer, to George Serafini, Binghamton, \$1,400; other bidders, F. E. Whittemore, \$1,672.60; C. W. Rose, \$1,865; J. W. Towne, \$1,650.

Bellefontaine, O.—Installation of sewerage system to William McDowell & Son, Cleveland, \$31,403; city has decided to bring suit upon bond of Contractor Joseph P. Degnan, of Toledo, who was low bidder on work and refused to perform it, stating he had made mistake on bid; details under "Bids Received."

Hamilton, O.—To Graver Contracting and Transfer Co., city, for storm sewers on 4th, 5th and Vine sts., about \$15,412; to Hall-Cronin Co., Dayton, for the storm sewer in Central ave. and 7th st., \$22,694; to Scioto Valley Supply Co., Columbus, for various sizes of wrought iron pipe, etc., \$16,006; to Frank J. Davis, city, for the storm sewer in Milikin st., \$5,030.

Brownsville, Ore.—Main sewer to John R. Penland, Albany, \$1,500; the work to be completed by December 15.

Chester, Pa.—To J. A. Morgan, for making sewer and water connections throughout city, long connection, with water main in center of the street, \$27; sewer on far side and water main on near side of street, \$23; sewer on far side and water on near side, \$26; only other bidder: Cross Plumbing and Heating Co.; long sewer connections, \$26; long water connections, \$13.50; short sewer connections, \$15.50; short water connections, \$9.50; connections where sewer is in center of street, \$23; if trap or vent box not used, \$2 less, each.

Dallas, Tex.—Furnishing manhole covers, to Hardwick-Abbott Manufacturing Co., \$6.25 each.

Sonohomish, Wash.—Laying Maple st. sewer to Phillips & Son, \$3,035.39.

BIDS RECEIVED

Roseville, Cal.—Installing proposed sewer system: Latourette & Fiscal Company of Sacramento, \$48,482; D. W. Pierson, Sacramento, \$50,866; John Heaney, Oakland, \$53,000; Federal Construction Company of San Francisco, \$57,900; C. D. Vincent, Oakland, \$42,835.50; Contra Costa Construction Company of Oakland, \$59,450; Clark & Henery, of Sacramento, \$75,740; also several bids for parts of contract.

Yorkville, N. Y.—Constructing complete sewerage system and disposal plant, bids opened Nov. 7: (a) John Young, Syracuse; (b) Jas. W. Johnson, Utica; (c) Samuel Bonn, Syracuse; (d) Albert Geoffrey, Syracuse; 8-in. pipe and branches, 0 to 18 ft., (a) 50c. to \$2.17 per ft.; (b) 55c. to \$1.60; (c) 50c. to \$2.50; (d) 45c. to \$3.50; 10-in. pipe, (a) 60c. to \$2.20; (b) 75c. to \$2.50; (c) 63c. to \$2.60; (d) 50c. to \$3.55; 12-in., (a) 65c. to \$2.28; (b) 75c. to \$2.40; (c) 69c. to \$3; (d) 55c. to \$3.60; 15-in., (a) 78c. to \$3.03; (b) 95c. to \$2.75; (c) 70c. to \$3.25; cast-iron pipe laid, 10-in., (a) \$3 per ft.; (b) \$3.50; (c) \$1.25; (d) \$2; 12-in., (a) \$3.30; (b) \$4; (c) \$3; (d) \$2.50; 16-in., (a) \$4.30; (b) \$4.50; (c) \$4; (d) \$5; manholes complete, (a) \$4 to \$4.50 per ft.; (b) \$4.75 to \$5; (c) \$4 to \$5; (d) \$4 to \$5; flush tank complete, (a) \$6.25 to \$9; (b) \$7 to \$11; (c) \$11; (d) \$7.50 to \$9; rock excavation, none expected, (a) \$4 per cu. yd.; (b) \$2; (c) \$10; (d) \$2; concrete in crossings, (a) \$6 per cu. yd.; (b) \$6; (c) \$6; (d) \$5; concrete, not otherwise provided for, (a) \$8 per cu. yd.; (b) \$11; (c) \$6; (d) \$6; brick masonry, (a) \$8 per cu. yd.; (c) \$15; (d) \$9; piling, other than river outlet, (a) 50c. per lin. ft.; (b) \$1; (d) 60c.; river outlet complete, (a) \$115; (b) \$200; (c) \$150; (d) \$150; disposal plant, (a) \$3,491.20; (b) \$4,000; (c) \$3,800; (d) \$4,000; earth excavation, disposal plant, (a) 50c. per cu. yd.; (b) \$1; (c) \$1.25; (d) 50c.; concrete, disposal plant, (a) \$6 per cu. yd.; (b) \$9; (c) \$8; (d) \$6; Nick Camelo, city, offered to do job complete for \$17,000, but bid will not be considered as he did not make itemized bid.—Wm. Armstrong, Village Clerk.

Bellefontaine, O.—Constructing of sewers, Sects. 1 and 2, as follows: Sect. 1, J. P. Degnan, Toledo, lowest bidder: 17,075 ft. 8-in. sewer pipe, furnished and laid, 9c.; 810 ft. 10-in., 12c.; 2,480 ft. 12-in., 15c.; 4,576 ft. 15-in., 21c.; 3,610 ft. 18-in., 29c.; 2,150 ft. 24-in., 49c.; 6,995 ft. exca. and backfill, under 6 ft., 15c.; 13,981 ft. 6 to 8 ft. deep, 20c.; 7,765 ft., 8 to 10 ft. deep, 40c.; 1,235 ft., 10 to 12 ft. deep, 65c.; 525 ft., 12 to 14 ft. deep, 80c.; 200 ft., 14 to 16 ft. deep, \$1; 2,000 ft. 4-in. house connections, 23c.; 500 ft. 6-in. house connections, 25c.; 72 manholes, each, \$13; 9 drop manholes, each, \$15; 13 flush tanks, each, \$33; total, \$20,229. Sect. 2: 6,110 ft. 6-in. sewer pipe, finished and laid, 14c.; 25,665 ft. 8-in., 8c.; 6,635 ft. 10-in., 12c.; 2,740 ft. 12-in., 15c.; 2,880 ft. 15-in., 21c.; 2,080 ft. 18-in., 29c.; 3,660 ft. exca. and backfill, under 6 ft., 15c.; 21,405 ft., 6 to 8 ft. deep, 20c.; 14,985 ft., 8 to 10 ft. deep, 40c.; 5,240 ft. 10 to 12 ft. deep, 65c.; 700 ft. 12 to 14 ft., 70c.; 120 ft. 14 to 16 ft., \$1; 50 ft., 16 to 18 ft., \$1.20; 5,000 ft. 4-in. house connections, 23c.; 1,000 ft. 6-in. house connections, 25c.; 139 manholes, each, \$13; 12 drop manholes, each, \$15; 15 flush tanks, each, \$35; total, \$25,781. Total of other bidders: (a) Sect. 1: (b) Sect. 2: E. C. McConnell, Kenton, (a) \$31,207; (b) \$40,782; Wm. McDowell & Son, Kenton, (a) \$33,382; (b) \$41,855; Irwin Bros., Greenville, (a) \$35,995; (b) \$44,439; John Beasley, Columbus, (a) \$40,115; (b) \$45,245; Vanmeter Constr. Co., Steubenville, (a) \$34,626; (b) \$45,502; U. S. Constr. Co., Columbus, \$43,575; (b) \$47,911; Newman Sewer Constr. Co., Evansville, Ind., (a) \$37,155; (b) \$48,615; John B. McLane & Co., Newport, Ky., (a) \$37,839; (b) \$48,618; Buckley Engr. Co., Norwalk, (a) \$39,614; (b) \$49,347; James Westwater, Columbus, (a) \$42,850; (b) \$52,041; Hunker & Williams, Springfield, (a) \$34,447; (b) \$45,622; The Hill, Bellefontaine, (a) \$42,557; (b) \$56,158; Logan Constr. Co., Bellefontaine, (a) \$41,555; (b) \$56,536.

WATER SUPPLY

Malvern, Ark.—Construction of water works is being considered.

Orland, Cal.—Election will be called on \$40,000 bonds for construction of water works.—J. N. Tibessant, Town Clerk.

Jacksonville, Fla.—Fire Chief Haney has recommended extension of high-pressure water system in E. Bay st. to Florida ave.

Tampa, Fla.—Fire Committee will recommend that a large cistern be installed at Palmetto Beach to furnish water in that locality.

Atlanta, Ga.—Water Board has asked \$1,200 appropriation for laying water main to tuberculosis hospital.

Chicago, Ill.—City Engineer John Ericson and Consulting Engineer Henry A. Allen

have prepared plans for rehabilitation and improvement of water works distributing system.

Morristown, Ill.—Citizens have voted \$10,000 of bonds for construction of municipal water system.

Newcastle, Ind.—City is considering permanent improvements to light and water plant.

Newton, Kan.—Citizens have voted bonds for improvement of water works.

Benton, Mass.—City has plans by C. R. Berry, Benton, for drilling artesian well; 1,000,000 gals. capacity.—William Young, Jackson, Engineer in Charge.

South Hadley Falls, Mass.—Fire District No. 1 has voted to construct water system in the Granby road district; cost \$12,000.

Granby, Mo.—M. Cook & Co., Joplin, are preparing plans for water works; cost about \$18,000.—J. W. Dale, Mayor.

Butte, Mont.—Board of Fire Underwriters has recommended installation of 16-in. main from west side reservoir through congested district and 20 additional hydrants.

Grand Island, Neb.—Plans have been completed by Engineers W. K. Palmer & Co., Dwight Bldg., Kansas City, Mo., for improvements and additions to the water works and electric light plant; cost, \$100,000.—H. E. Clifford, City Clerk.

Norfolk, Neb.—Plans are being prepared by Engineer W. K. Palmer, Dwight Bldg., Kansas City, Mo., for remodeling, increasing and general improvements to water works system.

Bogota, N. J.—A. B. Harris is seeking information from city of Plainfield regarding water franchises, price of water hydrants, etc., for town.

Newark, N. J.—Morris R. Sherrerd, Engineer, State Water Supply Commission, has outlined plans for constructing additional reservoir at Branchville.

Bloomington, N. Y.—Survey has been completed for installation of reservoir and water mains.—A. P. Smith, President of Village.

Cornwall, N. Y.—Town has voted \$30,000 bonds to provide another reservoir.

New York, N. Y.—Bids will be advertised by Board of Water Supply, Catskill Aqueduct Commission, within six or eight weeks for construction of aqueduct through heart of Manhattan Island at depth of from 250 ft. to 700 ft. beneath streets; plans approved by State Board of Water Supply; length 17½ miles; diameter 15 ft. at head, Hill View Reservoir, and for 9 miles; diameter 14 ft. rest of 8 miles to Bryant Park; cost \$25,000,000.—J. Waldo Smith, Chief Engineer.

West Sayville, N. Y.—South Bay Water Co., Patchogue, will build a pumping station.

Fargo, N. D.—Bids have been asked for construction of water mains in 14th st. and 5th ave.

Barberton, O.—Citizens defeated proposition to appropriate \$40,000 to purchase Lake Anna.

Dayton, O.—Citizens have defeated \$600,000 bond issue for extension of water works system; Chamber of Commerce will urge special election.

Portsmouth, O.—Citizens have voted \$100,000 bonds for new water works.

West Covington, O.—Citizens have voted \$10,000 water works bonds.

Haines, Ore.—Town is considering matter of obtaining water system.

Portland, Ore.—Citizens have voted \$2,500,000 bonds for change in method of laying water mains and for erection of municipal docks.

Chambersburg, Pa.—Consulting Engineer John Birkinbine has estimated cost of the gravity water 11-mile conduit from Birch Run to Chambersburg at \$103,800, and is based on contracts with Brooks & Co., and the U. S. Pipe Co. for laying, for pipe, material, etc.; this is exclusive of the intake at Birch Run, intermediate reservoir and rights of way.

Monessen, Pa.—Chester & Fleming, Union Bank Bldg., Pittsburg, have been chosen as consulting engineers for the improvement and extension of filtration plant of Monessen Water Co.

New Castle, Pa.—Council has directed Charter Revision Committee to present a bill to next State Legislature permitting the city to borrow money for water works and electric plant.

Pittsburg, Pa.—Citizens have voted water bonds as follows: For erection of pumping station, \$800,000; acquirement of land for construction and equipment of new reservoir on north side, \$1,200,000; repairs and replacements to several water pumping stations, \$100,000; work in water reservoir at filtration plant, \$200,000; for purchase of certain water lines owned by private water companies, and for the entering into of contracts with private water companies to furnish water to certain consumers at rates not exceeding the city rate, \$100,000, and for payment of balance due to the T. A. Gillespie Co. for the construction of the filtration plant, \$700,000.

Somerset, Pa.—Borough is considering construction of water works improvements; cost \$25,000.

Wampum, Pa.—Citizens have voted \$10,000 bonds for building water plant.

Wickford, R. I.—Town will ask Legislature for permission to install water and sewer system at cost of \$35,000.—Jos. G. Reynolds, Treasurer.

Johnson City, Tenn.—Council has ordered installation of 1,406 ft. of 6-in. water pipe in Willow st. and 2,600 ft. $\frac{3}{4}$ -in. in Carnegie.

Dallas, Tex.—Bids will be received Nov. 21 for \$100,000 water works bonds.—J. H. Ardrey, City Treasurer.

Chase City, Va.—J. Kent White, Waynesboro, has been chosen to prepare plans and specifications for water works and electric light plant; cost \$20,000.

Ellensburg, Wash.—Preliminary survey has been completed for water system for city; water will be piped from Lake Cle Elum, 33 miles, to Ellensburg; cost \$8,000 a mile.

Port Angeles, Wash.—Council is considering piping water of the Olympic Hot Springs into Port Angeles.

Prescott, Wis.—City has voted to install complete water works system.

Tomah, Wis.—City is considering \$4,000 expenditure for water main extensions.

Laramie, Wyo.—Citizens have voted \$55,000 water works bonds.

Point Grey, B. C., Can.—Plans and specifications are being completed and Council will soon ask for tenders for installation of water works system.—Cleveland & Cameron, Engineers in charge.

CONTRACTS AWARDED

Redlands, Cal.—To W. S. Hewitt & Co., Los Angeles, for construction of the big dam in Yucalpa Valley that will form the big reservoir; cost about \$12,000.

Centralia, Ill.—Cleaning water mains, to National Main Cleaning Co., New York; cleaning 10,375 ft. of 12-in. main, 24c. per ft.; 10,000 ft. of 10-in., 21c.; 7,500 ft. of 8-in., 19c.; 3,000 ft. of 6-in., 17c.; total, \$6,525.

Highland Park, Ill.—To T. H. Eglehart, Rookery Bldg., for constructing a cast-iron internal main water supply pipe 10-in. diameter in Linden and Cedar aves. and Sheridan road, \$10,113.

McLeansboro, Ill.—To Retzel & Chapman, Evansville, Ind., for construction of 55,000-gal. reservoir, \$13,934.

Morton, Ill.—To A. Everett, Washington, for laying 3,000 ft. of new water mains in eastern part of town.

Millis, Mass.—Laying water pipe, to the Hanscom Construction Co.

Bronson, Mich.—Constructing water works, to C. L. Olds Construction Co., Fort Wayne, Ind.—B. Walker, Village Clerk.

Sidney, N. Y.—Supply water for five years, to Sidney Water Co., \$1,200 per year.

Yonkers, N. Y.—Furnishing c.-i. pipe for Department of Public Works, to John Fox & Co., \$20.70 per 2,000 lbs.

Foraker, Okla.—To C. A. Rees to construct water works.

Saegertown, Pa.—Erecting reservoir and laying water mains to Henry Keupple, Olean, N. Y.; furnishing pipe and special castings to U. S. C. I. Pipe & Foundry Co., Buffalo; hydrants and valves to Kennedy Valve Manufacturing Co., Elmira, N. Y.

Highland Park, Va.—To I. J. Smith & Co., Richmond, \$4,885 for wells, trenches and pump house in connection with construction of water works to cost about \$45,000; to Glamorgan Pipe and Foundry Co., Lynchburg, lowest bidder for hydrants, pipe and valves, \$25,000; contract for engines, pumps and tanks, cost \$10,000, not awarded.

Seattle, Wash.—Water mains on Alonzo ave. N. W., to Dicken & Rightmire, 2728 33d ave. S., \$6,142.92.

BIDS RECEIVED

Jacksonville, Fla.—Sinking 10 in. artesian well 980 ft. with 500-ft. casing, in Springfield Park; Ohio Drilling Co., Jacksonville, \$3.55 per ft.; Southard Contracting Co., Lakeland, \$3.49 per ft.; Hughes Specialty Drilling Co., \$4.50; no certified check for \$500 required in the published notice for bids came with the proposal, and it was thrown out; Snyder Pump and Well Co., Richmond, Va., \$3.75 per ft.

Binghamton, N. Y.—Constructing a 5,000,000-gal. distribution reservoir, to include about 2,900 cu. yds. of concrete, plain and reinforced, and about 50,000 cu. yds. of excavation: Sand & Gravel Co., \$54,329; Crothers Contr. Co., \$81,133; T. H. Gill & Co., \$102,863; Welles Boughton Co., \$60,271; Ervin D. Baker, \$75,570; M. I. Ford, \$105,643; J. J. Tyne & Willey, \$116,749; Stobaugh Contr. Co., \$87,478, and Thos. & Wm. Murphy, \$94,021.

Denison, Tex.—Furnishing needed pipe, U. S. C. I. Foundry Co., lowest bidder, \$25.22 per ton.

LIGHTING AND POWER

Chico, Cal.—Enlargement and extension of plant of Sacramento Valley Power Co. is being considered. Chas. Legee, T. Toghazzini and A. B. Parker, all of Central Traction Co., San Francisco, are interested.

Prattville, Cal.—Great Western Power Co. is considering the construction of an electric power plant to develop electric power of water in Big Meadows.—N. H. Sinclair, San Francisco, General Manager.

Newark, Del.—Business men are considering better street lighting. Wm. H. Barton is interested.

Washington, D. C.—Engineer Commissioner Judson has announced tentative plans for establishment of municipal power plant at Great Falls, Va., and stated that Congress would be asked to appropriate money for preliminary work; initial step to harness power will be to secure appropriation of \$10,000 for surveying and other incidental labors.

Americus, Ga.—Citizens defeated proposed issue for municipal lighting plant; new election will be called.

Augusta, Ga.—Street Lighting Committee has recommended that the Mayor be authorized to appoint special committee empowered to investigate matter of street lighting, and if deemed necessary to correct situation to erect a municipal lighting plant.

Douglasville, Ga.—Citizens will vote on issuance of lighting plant bonds.

Newcastle, Ind.—City is considering permanent improvements to light and water plant.

Lexington, Ky.—Plans for \$300,000 power plant to be built on or near site of the present power house on London ave. are being considered by Lexington and Interurban Railways Co.

Midway, Ky.—Citizens have voted \$6,000 bonds to establish lighting plant.

Vine Grove, Ky.—W. A. Burkheart will utilize dynamo in flour mills to furnish lights.

Escanaba, Mich.—Citizens have voted \$30,000 bonds for establishment of gas plant.

Libby, Mont.—Franchise has been granted to E. K. Barnum and P. D. Pratt, Libby, to construct and operate electric light plant, water works and telephones; cost about \$100,000.

Fremont, Neb.—Bids will soon be received for city street lighting system to cost about \$8,000, including 2,000 ft. of 3-in., 6,640 ft. of 2-in. and 3,550 ft. of conduit, $\frac{3}{4}$ -in. fitting, 15 water-tight frames and manhole covers, 35,700 ft. double braid cable; poles will be furnished by the Fremont Foundry and Machine Co.; \$8,000.—Ira L. Hamm, City Engineer.

Franklin, Neb.—City is considering construction of electric light plant; cost about \$8,000.—J. A. Dickey, City Clerk.

Grand Island, Neb.—Plans have been prepared by Engineers W. K. Palmer & Co., Dwight Bldg., Kansas City, Mo., for improvements and additions to electric light plant.

Norfolk, Neb.—Plans have been prepared by Engineer W. K. Palmer, Dwight Bldg., Kansas City, Mo., for electric light plant.

Concord, N. H.—Plans are being considered by Central New Hampshire Power Co. for construction of a power plant on Blackwater River, in Webster.—Frederick L. Houghton, Dennison Cowles, Brattleboro, Vt., and Nathaniel E. Martin, Concord, N. H., Directors.

Highland Mills, N. Y.—Town Board is considering petition for establishment of lighting district.

Rochester, N. Y.—City Engineer Fisher is planning to improve electric lighting system in Rochester streets.

Cherokee, Okla.—City will make extension to electric light plant and water works.—A. J. Titus, Mayor.

Enid, Okla.—City Commissioners are considering proposition to light public square with acetylene gas.

Eugene, Ore.—H. H. White, General Manager of the Byllesby Co. for the entire Northwest, with Engineer O. T. Larsen, has about completed arrangements for proposed improvements at Eugene and Springfield in buildings for their power plant at that place and big gas plant in this city.

New Castle, Pa.—Council has directed Charter Revision Committee to present bill to next State Legislature permitting city to borrow money for electric light and water works plant.

Reading, Pa.—Applications have been filed for 18 new electric companies; Attorney Homer J. Shoemaker, Harrisburg, has matter in charge; new companies are: Edison Electric Light Co., Boyertown; Oley Township, Lower Alsace Township, Exeter Township, Earl Township, Douglass Township, Colebrookdale Township, Amity Township, Berne Township, Edison Birdsboro, Edison Pottstown, Lower Pottsgrove, Muhlenbert Township, Ontelaunee, Robe-

son, Union Township, Upper Pottsgrove, West Pottsgrove Township, Walter A. Rigg, George L. Roller, Harry H. Reigel, all of Reading, are interested.

Spartanburg, S. C.—Electric Power and Mfg. Co. has decided to enlarge its plant; also to establish substation in Gaffney.—F. H. Knox, General Manager.

Nashville, Tenn.—Citizens have defeated proposed Geist gas franchise.

Palacios, Tex.—Clyde Randolph has sold his electric light, ice plant and cotton gin to C. D. Deal, Colorado Springs, Col., who is now in city.

Brigham City, Utah.—Committee on Electric Lights has recommended that water wheel of Francis turbine type and Westinghouse generator be installed at power plant.

Burlington, Vt.—Special Investigating Committee, Alderman Cowles, Chairman, will recommend \$30,000 appropriation for new equipment for municipal lighting plant.

Chase City, Va.—Plans will be prepared by J. Kent White, Waynesboro, for electric light plant and water works; cost \$20,000.

Virginia Beach, Va.—City is considering granting franchise for electric light plant.—W. J. Wright, Mayor.

Clarkston, Wash.—Lewiston - Clarkston Improvement Co. has completed plans for improvement of light and power system at cost of \$100,000.—E. H. Libby, President.

Walla Walla, Wash.—Pacific Power and Light Co., A. S. Greiner, General Manager, will erect new gas plant; new equipment will be installed in old building at cost of \$20,000.

Milwaukee, Wis.—Council has repealed ordinance to issue \$150,000 bonds for municipal light plant.

CONTRACTS AWARDED

Allertown, Ia.—Construction of power house for municipal electric light plant, to A. Madris, Corydon.

Belle Plaine, Ia.—Installing modern system of high pressure, carburetted water gas to American Construction Co., Newton.

Blue Hill, Neb.—To Alamo Engine and Supply Co., Omaha, for constructing electric light plant, \$8,500.

Westfield, N. J.—To Public Service Corporation of New Jersey for lighting streets of town for three years.—Dudley Farrand, Newark, General Manager Electrical Department.

BIDS RECEIVED

Buffalo, N. Y.—Westinghouse Machine Co. lowest bidder, \$248,180, for installing three steam turbine electric generators.

FIRE EQUIPMENT

Argenta, Ark.—Council has decided to purchase auto fire engine.

Auburn, Cal.—Firemen are raising funds for purchase of chemical engine.

Los Angeles, Cal.—Plans have been approved by Fire Commission for erection of drill tower at Ave. 19 and Pasadena ave.; cost \$3,000. Address Chief Ensley.

Stockton, Cal.—City Engineer R. C. Tumulty has estimated cost of improvements to fire department at \$100,000; plans prepared; bond election will be called.

Pomona, Cal.—City is considering installation of auto hose truck, also additional fire alarm boxes.—W. H. Poston, Chief.

San Francisco, Cal.—Fire Commissioners have recommended purchase of site at Union and Scott sts. for erection of fire house.

Libertyville, Ill.—Plans are being prepared for erection of fire house.

Peoria, Ill.—Board of Fire Commissioners has recommended purchase of oxygen helmets for firemen.

Riverton, Ill.—Architect W. H. Conway, Springfield, has prepared plans for erection of fire station.—J. L. Smith, Chairman Board of Trustees.

Indianapolis, Ind.—Plans are being considered for rebuilding and reorganizing fire department, estimated cost as follows: Acquisition of ground in North Alabama st., \$125,000; new fire engine house, Kentucky ave. and Maryland st., \$40,000; new fire engine house, South and New Jersey sts., \$40,000; new fire engine house and site north of Thirty-fourth st., requested by Councilman Denny, \$11,500; new police headquarters, \$75,000; total, \$291,000.

Mishawaka, Ind.—Council is considering asking for bids for motor fire truck.

New Albany, Ind.—Special committee consisting of Councilmen Curl, Kreutzer and Barth, appointed to consider establishment of company of fire department in Seventh Ward, has reported favorably; estimated cost of new reel house, 60 x 28 ft., two stories high, constructed of concrete blocks, at Culbertson ave. and Thomas st., is \$2,200, and cost of the equipment, \$1,600.

Redding, Ind.—City Trustees have passed to print ordinance authorizing purchase of auto fire chemical engine; cost \$6,000.

Sioux City, Ia.—City, R. S. Whitley, Commissioner of Public Safety, will purchase in spring additional fire hose; purchase of aerial truck is being considered.

Clio, Mich.—Purchase of auto fire engine is being considered.

Escanaba, Mich.—Citizens have voted \$15,000 bonds for erection and equipment of fire house in Seventh Ward.

Laurium, Mich.—Village Council is considering installation of fire alarm boxes; cost of box is estimated at \$125; labor, wire, poles, etc., at \$385.—Gus Preuss, Fire Chief.

St. Peter, Minn.—Fire Chief Otto Walter has asked Council for purchase of 500 ft of hose.

Butte, Mont.—Board of Fire Underwriters has recommended installation of modern quick-raising aerial truck carrying 75-ft. ladder, establishment of hose company equipped with motor-propelled combination hose wagon, chemical company with auto chemical wagon, also minor equipment.

Hackensack, N. J.—Citizens have voted \$7,500 bonds for engine house for Heights section.

Paterson, N. J.—Citizens have voted \$25,000 bonds for erection of fire headquarters on Van Houten st.

Ridgefield Park, N. J.—Citizens have voted to install fire alarm system at cost of \$6,000.

Babylon, L. I., N. Y.—Babylon Hook and Ladder Co. is asking village to furnish it with a new truck; cost \$2,000.

Le Roy, N. Y.—Erection of combined fire station, city hall and jail is being considered by Board of Trustees.

Schenectady, N. Y.—Volunteer hose company has been formed at Rexford Flats.—Wm. White is interested.

Syracuse, N. Y.—Architects Makepeace & Makepeace have prepared plans for \$18,000 fire house to be erected on Wolf st. for Engine Co. No. 4.

Akron, O.—Council is considering \$3,300 bond issue to purchase combined auto and chemical engine for Fire Chief Mertz; present Chief's auto will be dispensed with.

Martin's Ferry, O.—Committee has been appointed by different hose companies to take up purchase of auto truck.

Butler, Pa.—Citizens have defeated bond issue for installation of fire alarm.

Du Bois, Pa.—Fire Chief Ditchburn has recommended erection of house for hook and ladder truck.

Elkins Park, Pa.—Old York Road Fire Company of Ashbourne, Harvey Bourley, Melrose Park, President, is developing plans to purchase a fully equipped automobile apparatus; cost in neighborhood of \$9,000.

Franklin, Pa.—Council will purchase storage battery system with switchboard for fire alarm system.—F. D. Grimm, Fire Chief.

Nanticoke, Pa.—Newport Township citizens have voted to erect fire hose houses at Glen Lyon, Wannie and Alden.

Rittersville, Pa.—Fire Company is considering erection of three-story fire house.—E. Brezner, Chairman, Board of Trustees.

York, Pa.—Council is considering ordinance for purchase of Seagrave aerial truck; cost \$5,000.

Spartanburg, S. C.—Fire Chief E. S. Kennedy has recommended erection of fire station and purchase of auto fire engine.

Columbia, Tenn.—Council is figuring on 1,000 ft. more of fire hose; erection of engine house on 6th st. is also being considered.

Fort Worth, Tex.—Fire and Police Commissioner Mulkey has recommended addition to central fire station.

Norfolk, Va.—Erection of fire station in Sixth Ward is being urged by residents.

Beloit, Wis.—Council is considering purchase of motor propelled combination chemical engine and hose wagon.

Milwaukee, Wis.—Council has adopted resolution to engage expert to investigate advisability of combining fire alarm and police telegraph systems.

CONTRACTS AWARDED

Jacksonville, Fla.—Furnishing fire hose; 1,000 ft., to Eureka Fire Hose Manufacturing Co., New York, \$1.10 per ft.; 1,000 ft., to Fabric Hose Co., \$1 per ft.

Duluth, Minn.—Gasoline fire engine for New Duluth, to Waterous Engine Co., St. Paul, \$3,000; \$250 will be allowed for old engine.

Rahway, N. J.—Steam fire engine to American-La France Co., Elmira, N. Y., \$4,675.

Du Bois, Pa.—Erecting hose tower, to A. N. Work, \$617.

BIDS RECEIVED

Washington, D. C.—Construction of a chemical engine house: George E. Wyne, \$28,700; Skinker & Garrett, \$28,621; W. H. McCrary, \$32,000; Burgess & Parsons, \$29,-

597; W. E. Mooney, \$29,875; Randolph L. Jennings, \$30,999; H. J. Montgomery, \$29,650; Thomas J. Melton, \$27,763; Boyle-Robertson Co., \$28,763; Hoge & Luebker, \$28,342.

Norfolk, Va.—Furnishing 1,600 ft. of fire hose: W. H. H. Corey, city, 90c. per ft.; J. D. Westbrook, city, 99c.; Henry Walke Co., city, \$1; Southern Supply Co., city, from 90c. to \$1.10; Eureka Co., Atlanta, \$1.15; Fabric Fire Hose Co., Baltimore, from \$1 to \$1.10; E. V. White & Co., 60c. to 90c..

BRIDGES

Aurora, Ill.—H. S. Wetherell, Chicago, has been chosen to prepare plans for a concrete bridge to be constructed over river between Illinois ave. and Pierce st; cost, about \$35,000.

Newcastle, Ind.—Plans have been prepared by Engineer J. W. Mueller, Colonial Bldg., for six 20 to 30-ft. span concrete and steel bridges; cost from \$450 to \$650.—W. L. Risk, County Auditor.

Hutchinson, Kan.—Township Boards of Haven and Plevna have decided to replace worn-out wooden bridges with concrete structures; W. B. Harris, County Engineer, will prepare plans.

Iola, Kan.—Allen County has defeated proposition to issue bonds for erection of bridges.

Alexandria, La.—Grand Jury has urged \$350,000 bond issue for bridges and roads.

Kalamazoo, Mich.—Citizens have voted \$25,000 bonds for Gull st. bridge and \$16,000 for Mill st. bridge.

Springfield, Mo.—Citizens will vote Nov. 21 on \$100,000 bonds for construction of bridges and culverts.

Hastings, Neb.—Bids will be received by Adams County Board of Commissioners about Dec. 31 for annual bridge contract.—C. A. Heartwell, County Engineer.

Lincoln, Neb.—City is considering erection of concrete bridge at 1st and B sts.—Roscoe Ozman, City Clerk.

Freehold, N. J.—County Board of Freeholders is considering rebuilding of bridges at Keansburg.

Princeton, N. J.—Bridge Committee, Board of Freeholders, will receive bids for widening and repairing bridge over stream at Ewing st.

Orangetown, N. Y.—Town Superintendent Wahnenberger has made following estimates: Repairs and improvements of highways and bridges having a span of less than 5 ft., \$6,290; repairs and construction of bridge near Odd Fellows' Hall, Piermont, \$750; general repairs of bridges having more than span of 5 ft., \$300; for purchase and repair of town machinery, \$250; construction of a bridge north of Hotel Forest Castle, Grand View, \$600.

Yonkers, N. Y.—Board of Supervisors is considering rebuilding of two bridges between this city and Eastchester.

Cleveland, O.—County Engineer Lander will prepare plans for construction of 40-ft. concrete bridge over Eddy Brook in Bratenahl Township.

Muskogee, Okla.—Muskogee County will vote Nov. 22 on \$140,000 of bridge bonds.

Carlisle, Pa.—Construction of a bridge spanning the Branch Creek on Main st. is being considered.

Brownsville, Pa.—Fayette County Commissioners are considering construction of bridge over Monongahela river at Brownsville; cost, \$350,000.

Shippensburg, Pa.—Council will ask for bids for construction of bridge over Main's Run.

Wilkes-Barre, Pa.—Grand Jury has recommended erection of bridge over Susquehanna River.

Richmond, Va.—Henrico County Supervisors are considering construction of bridges at point where Broad st. road crosses tracks of Richmond, Fredericksburg and Potomac Railroad.

Bellingham, Wash.—Plans and specifications have been prepared by City Engineer Whitney for construction of a substantial bridge across Whatcom Creek; cost \$15,000.

North Yakima, Wash.—County Commissioners have voted to build two new bridges, one across the Sunnyside Canal on the Hanover road, and the other across the Cowiche River at Painted Rocks; total cost will be upward of \$30,000; Commissioners will advertise for bids at once.

Janesville, Wis.—Citizens have voted to build cement and steel bridges at 4th ave. and Racine sts.; cost \$25,000 and \$17,000.

CONTRACTS AWARDED

Oroville, Cal.—Constructing fill at approach of Feather River bridge to O. A. Peter, 59c. per yd.

Pueblo, Col.—Construction of steel bridge over Arkansas River at Union st. to Pueblo Bridge Co., city, \$49,000; time of completion, April 15; other bidders: Midland Bridge Co., Kansas City, \$50,600; Missouri

Valley Bridge Co., Wichita, Kan., \$50,800; J. J. Burke & Co., \$52,000; M. J. Patterson Con. Co., Denver, \$59,090; A. M. Blodgett Con. Co., Kansas City, \$49,950.—D. P. Gaymon, City Engineer.

Elkhart, Ind.—Erecting bridge over river at Bristol to Elkhart Bridge & Iron Co., \$15,500; \$1,500 allowed for old bridge.

Indianapolis, Ind.—Two bridges across Pogue's Run, to Hackedorn Construction Co., \$9,300.

Yonkers, N. Y.—Erecting bridge over Nepperhan River, to Kearns & Hart, \$7,647.60.

Cleveland, O.—Construction of bridge works, Newburg Township, to Concrete & Steel Construction Co., Century Bldg.—J. F. Godenbogen, Clerk.

Nowata, Okla.—By Nowata County Commissioners, to Canton Bridge Co., Canton, O., to construct 25 bridges, \$44,090.

Elizabethtown, Pa.—To D. B. Hoover for construction of reinforced concrete girder bridge.

Cameron, Tex.—To C. Q. Horton, Austin, to construct bridge across Brushy Creek near Thorndale.

BIDS RECEIVED

Springfield, Mo.—Construction of bridge across Wilson Creek on Boonville st., Weber Bros., \$6,848; M. H. Clark, \$7,250; Kansas City Bridge Co. and the Weaver-Weeks Construction Co., \$6,948.

MISCELLANEOUS

Birmingham, Ala.—City has plans by Harry Wheelock for proposed brick jail.—C. Exum, Mayor.

Montgomery, Ala.—Council is considering purchase of site at Monroe and McDonough sts. for erection of police station.

Los Angeles, Cal.—Wilbur D. Cook, Jr., Landscape Architect, Wright & Callender Bldg., has been commissioned to lay out townsite of Whittton for a syndicate, J. Harvey McCarthy, Grant Bldg., President; there will be three diverging boulevards 100 ft. wide, a park of 16 acres for city hall and other municipal buildings, all the streets will be curbed and graded and most of them paved with asphalt; bids will be asked soon.

Oakland, Cal.—Street Department will place street signs throughout entire annexed territory as soon as funds are available.

Washington, D. C.—City has plans by Snowden Ashford, 1719 Riggs pl. N. W., Washington, for proposed \$35,000 Carnegie library at Takoma Park.

Jacksonville, Fla.—According to an opinion submitted to Board of Public Works by P. H. Odom, City Attorney, Board has authority under recent ordinance appropriating money for erection of new crematories, to employ services of a sanitary engineering expert to advise city as to best method of disposing of garbage from viewpoint of local conditions.

Jacksonville, Fla.—Bids will be asked for auto police patrol; also motorcycles.

St. Petersburg, Fla.—City has sold \$100,000 bonds to Weil, Roth & Co., Cincinnati; city jail and fire house will be built, sewer system extended, water works increased, streets paved with vit. brick and city dredge will be operated for three years.

Chicago, Ill.—Citizens have voted \$3,500,000 bonds for erection of city hall; \$3,000,000 bonds for county hospital and issue of park bonds.

Indianapolis, Ind.—Building of fire headquarters, police headquarters, city dispensary and city garage buildings is being considered by Mayor Shank and Council.

Topeka, Kan.—Shawnee County has voted \$50,000 bonds of improvement of State Fair Grounds.

Henderson, Ky.—Henderson County has defeated proposition to issue \$30,000 bonds to remodel jail.

Louisville, Ky.—Citizens have voted \$1,000,000 bonds for erection of city hospital.—W. O. Head, Mayor.

Shelbyville, Ky.—Shelby County has defeated proposition to issue \$75,000 bonds for erection of courthouse.

Baltimore, Md.—Plans for large concrete office and laboratory building to be erected in connection with sewage disposal plant at Back River are about ready for bids. Building will be a four-story concrete structure and part will be used as a transformer station; Calvin W. Hendrick is Supervising Engineer, and work will be done by city.

Baltimore, Md.—Citizens have voted \$7,500,000 bonds for docks, schools and covering Jones Falls with boulevard; also for refunding purposes.

Cumberland, Md.—Commissioner of Streets and Public Works has advertised for bids for renumbering South Cumberland and renewing street signs.

Haverhill, Mass.—Alderman Desmond is urging purchase of street flushing machine.

Grand Rapids, Mich.—City Engineer Cutcheon has estimated cost of installing pump at foot of east side canal at \$2,000.

Duluth, Minn.—Council has passed ordinance authorizing issue of \$50,000 bonds for acquisition of new park property.

Audubon, N. J.—Citizens have voted bonds for public improvements.

Ridgefield Park, N. J.—Citizens have defeated proposition for erection of \$8,000 city hall.

Binghamton, N. Y.—Board of Estimate and Apportionment in budget has allowed City Engineer \$1,000 for brick, sand, tools and traps.

Brooklyn, N. Y.—City has purchased site at Livonia ave. and New Lots Road for erection of public hospital; plans being prepared.

Buffalo, N. Y.—Fire Commissioners advocate equipping all buildings over two stories with fire escapes.

Buffalo, N. Y.—Francis G. Ward, Commissioner of Public Works, will prepare plans and ask bids for erection of garage on Franklin st.

Le Roy, N. Y.—Erection of combined city hall, jail and fire house is being considered by Board of Trustees.

Mt. Vernon, N. Y.—Citizens have defeated proposition to purchase site for city hall building.

Schenectady, N. Y.—Board of County Supervisors has decided to purchase site in rear of county building for erection of jail.

Cincinnati, O.—Citizens have voted \$100,000 park bonds.

Toledo, O.—Council has directed Public Service Director to advertise for bids for laying refuse breaker at this city from Dec. 10 to April 15.

Toledo, O.—Citizens have voted \$250,000 bonds for county memorial building and modern assembly hall.—W. L. Milner, Chairman Trustees.

Enid, Okla.—Bids will be readvertised for erection of city jail.

Weatherford, Okla.—City will erect \$7,500 city hall.—J. H. Anderson, Mayor.

Portland, Ore.—Citizens have voted \$2,500,000 bonds to purchase land and erect municipal docks and for change in method of laying water mains.

Portland, Ore.—Detailed plans for the improvement of Ladd Park prepared by Park Superintendent Mische have been approved by City Park Board and the scheme will be followed, as money is available to meet the expenses.

Butler, Pa.—Citizens have defeated bond issue for parks.

Johnstown, Pa.—Committee on City Property will recommend erection of police and public safety building.

Pittsburg, Pa.—Citizens have voted \$1,500,000 bonds for erection, furnishing and equipping of municipal building, and \$250,000 bonds for acquirement of land and erection and equipment of a tuberculosis hospital; \$100,000 bonds for the acquirement of land for and erection and equipment of municipal incinerating or refuse disposal plant; \$800,000 for acquirement of land for and equipping and improving of public playgrounds, and \$200,000 for improving of existing public parks, and \$100,000 bonds for laying out and construction of roads and parks in improvement of public wharves of city.

Reading, Pa.—Citizens defeated \$1,250,000 loan for public playgrounds, parks, sewers and other improvements, including erection of city hall.

Providence, R. I.—Special Committee, Councilman Jos. Baker, Chairman, has recommended that whenever city takes steps to make improvements on river walls at Market Square, facilities be provided there for covered or sheltered public market.

Brookings, S. D.—Citizens have voted \$100,000 bonds for erection of county court house; plans prepared; bids will soon be asked.

Chattanooga, Tenn.—Frank Reynolds, Secretary Chamber of Commerce, is urging erection of market house.

Lynchburg, Va.—Children's Playground Association has petitioned Council for appropriation of \$17,500 to buy a square on Fifth st. to establish public playground.

Seattle, Wash.—Board of Public Works has authorized City Engineer Thomson to take competitive bids on material to be used in construction of new garbage incinerator; items on which figures are to be asked for are Mansfield & Dawson blower tubes, 400 regenerator tubes and about 65,000 fire brick.

Sultan, Wash.—Plans will be prepared for erection of town hall.

Antigo, Wis.—County Board will consider erection of jail.

Milwaukee, Wis.—Council has instructed Board of Estimates to provide for \$250,000 bond issue in new budget for harbor.

Milwaukee, Wis.—Citizens have passed questions relating to public bathhouse, central police station and municipal electric light plant.

Racine, Wis.—Citizens have voted \$30,000 bonds for garbage plant.

CONTRACTS AWARDED

Syracuse, Kan.—To Ed. Owens for building county jail.

Boston, Mass.—Repairing dumping scow No. 4, to D. D. Kelly & Son, \$1,225; other bidders, Atlantic Works, \$1,362, and R. T. Green Co., \$1,750.

Grand Rapids, Mich.—To A. W. Morgan for remodeling detention hospital, \$6,500.

Roselle, N. J.—Erecting \$20,000 borough hall to Emil Klov, city.—W. G. Lawrence, Architect.

Ventnor City, N. J.—Furnishing and placing concrete monuments, to the Atlantic Excavating Co., 2320 Atlantic ave., Atlantic City.—W. I. Risley, City Engineer.

New York, N. Y.—Repairing steamboat "Wm. H. Wickham" to J. M. Sullivan Co., foot of E. 9th st., \$969; repairing dock at foot of E. 26th st., to New York Submarine Contracting Co., 30 Pearl st., \$975.

Enid, Okla.—Equipment for city jail, to Van Dorn Iron Works, Cleveland, O., \$1,669.50.

York, Pa.—Furnishing street signs to Selak & Bros., city, 24c. each.

BIDS RECEIVED

Pomona, Cal.—Completing city hall: Painting and tinning, Andrew Chilstrom, \$512; Wilton Bros., \$505; for mill work, sash, doors, etc., Pacific Sash and Door Co., \$1,840.75; Wilton Bros., \$1,810; for plumbing, G. H. O'Brien, \$150; electrical work, Newberry Bendheim Electric Co., \$550; finishing hardware, locks, hinges, doors, etc., George & Harris, \$350; completion of entire city hall, Wilton Bros., \$8,995.

Galesburg, Ill.—Removal of garbage for one year beginning Jan. 1, William Newhouse, \$4,000; L. M. Clapp, \$4,500.

Elizabeth, N. J.—Erection of a 2-story steel frame shed on recreation pier, B. H. Brooks & Co., lowest bidder.

Albany, N. Y.—Construction of the Third Precinct station house, A. Pasquini, \$36,975; R. P. Sewell & Son, \$36,450; John J. Kelly, \$32,670.51; Peter Keeler Building Co., \$34,233; Morris Kantowitz, \$33,000; Feeney & Sheehan Building Co., \$35,500; John J. Finn & Son, \$34,231; Collins Bros., \$36,150; Farrell & Rigney, \$35,983.

Yonkers, N. Y.—Decorating city hall, Willet & Schultz, \$17,000; Toby Furniture Co., \$12,120; J. N. Lange, \$11,686; L. C. Tommassi, \$14,750; Wilfred Fuller, \$23,770; Shannon & Beck, \$14,989.

TOO LATE FOR CLASSIFICATION

STREET IMPROVEMENTS

Oakland, Cal.—New bids will be received for improvement of Bridge ave.

San Jose, Cal.—Tully road and Stone ave. will be improved with 4-in. subsurface of road; plans have been approved by County Surveyor McMillan.

Santa Ana, Cal.—Council has approved specifications for paving West Fourth st.

Detroit, Mich.—City has voted \$200,000 bonds for good roads; \$200,000 of this amount will be expended next year.

Collingswood, N. J.—Council has passed ordinances for laying sidewalks on three streets.

Newark, N. J.—Chief Engineer Sherrerd of Board of Works has estimated cost of making Mechanic st. 60 ft. between house lines at \$350,000.

Brooklyn, N. Y.—Local Board of the New Lots District has adopted following resolutions: Lay cement sidewalks on Christopher ave., \$1,950; to pave Livonia ave. and Sutter st. with asphalt on concrete foundation.—R. L. Haskell, Borough Secretary.

New York, N. Y.—Local Board of Crotona has decided to pave with asphalt block E. 182d. Park to Bathgate aves., and with sheet asphalt from Washington to Bassford and from Bathgate to Stebbins aves.—George Donnelly, Borough Secretary.

Tarrytown, N. Y.—Taxpayers outside of incorporated villages in the town of Greensburg have voted \$138,000 for new roads; roads to be rebuilt and macadamized are Fort Hill Avenue, Underhill Road, Worthington Road, Mount Pleasant Road and Kensico Road; total distance, about 7 miles.

Bradford, Pa.—Citizens have voted \$27,000 bonds to repave Webster st. with vit. brick and to erect steel bridges.—B. A. Ware, City Engineer.

Erie, Pa.—Street Committee is considering paving of W. 10th st.

Coraopolis, Pa.—Citizens have voted bonds for improvement of streets.

Cuero, Tex.—Citizens have voted tax for road construction.

Dallas, Tex.—Council has ordered paving of Houston st.; cost \$3,913.

Weimar, Tex.—Commissioners' Court will consider tax election for construction of good roads.

Norfolk, Va.—Board of Control has asked estimates for improving roads in city cemeteries. Residents of Baltimore st. are urging paving of that thoroughfare.

Norfolk, Va.—Finance Committee has approved \$18,000 appropriation for paving portion of Bank st. with smooth material.

Portsmouth, Va.—City has sold \$125,000 paving and grading bonds and \$75,000 for improvements in Sixth and Seventh Ward to N. W. Halstead.

Tacoma, Wash.—Citizens have voted bonds for construction of roads.

CONTRACTS AWARDED

Harvey, Ill.—To Smith & Brown, Chicago, to pave Columbia ave. with brick, \$17,569.

Boston, Mass.—To Warren Bros. Co. for paving Massachusetts ave. with asphalt, \$8,499.

Newark, N. J.—Grading and paving Union ave., Belleville, from Joralemon st. to Avondale road, to Philip and Peter Jananone, \$13,434.68; grading and paving Gregory ave., West Orange, from Mt. Pleasant ave. to Luddington road, to Donato Fusco, \$13,833.18; resurfacing Green Brook road, Caldwell, to R. C. McMains, \$1,297.

Chardon, O.—Paving one mile, Hampden Township, to Cement Products Co., Erie, Pa., \$11,067.

Nashville, Tenn.—To Southern Roofing & Paving Co. for concrete paving, \$6,000.

BIDS RECEIVED

Altoona, Pa.—Paving 157,000 sq. yds. Standard Construction Co. lowest on 119,498 sq. yds.; Bell-Bockel Stone Co. on 29,676 sq. yds.; W. H. Herr on 4,914 sq. yds., and Klipp Contracting Co. on 3,515 sq. yds.; Purnell & Erbrick Co. bid on the entire 64 lots of paving, highest bid with asphalt filler, \$2.94 and lowest \$2.33; high bid for grout filler, \$2.74 and lowest \$2.11; highest bid by W. H. Herr for paving with asphalt

filler, \$2.45 and lowest \$2.20; grout, high, \$2.25; low, \$2; bid on 15 contracts. Standard Construction Co.'s highest bid on asphalt filler \$2.79 and lowest \$2.25; for grout, \$2.37 highest, and \$1.95 lowest; bid on all the paving. Klipp Contracting Co. highest bid on asphalt paving, \$2.90, lowest \$2.19; for grout filler, highest \$2.65 and lowest \$2.16; company bid on practically all lots. Saupp & Drhew bid on 10 lots, highest bid for paving with asphalt filler, \$2.38, and lowest \$2.30; for grout, highest, \$2.28, and lowest \$2.20. Bell-Bockel Stone Co. bid on entire lot; asphalt filler, highest bid, \$3.02, and lowest, \$2.29; for grout filler, high, \$2.80 and low, \$2.09. Cana-Knox Supply Co. submitted a bid for one location, \$2.40 for asphalt filler and \$2.24 for grout. Practically all the bids specified Patton brick, although several other standard grades were mentioned.

Dallas, Tex.—Grading of 1st, 2d, 3d and 4th aves. and intersections in Exposition Park, estimated handling about 15,000 cu. yds. of earth: Innes Gano 28c. cu. yd.; A. F. Moberly, 28½c.; Cullom & Bayousett, 28½c.; E. L. Harralson, 28½c.; B. C. Doty, 28c., with 2c. additional for every 500 ft. of haul above 1,000 ft.

SEWERAGE

Bisbee, Ariz.—Council will soon let contract for 23,000 ft. of sewer pipe, 1,000 yds, 70 tees, 50 manhole covers and 15 flush tank siphons.

Calexico, Cal.—Citizens have voted \$35,000 bonds for construction of sewer system.

Oakland, Cal.—New bids will be asked for construction of sewer in Foothill Boulevard and Fortieth Ave.

Plainville, Conn.—Town is favorable to establishment of sewer district.

Atlanta, Ga.—Resolution is being considered by General Council requiring the City Engineer to secure labor and material and begin at once to lay sewers that had been passed up and had not been laid by contractor, the Georgia Granite Co., to advertise for bids for some of work and if bids were higher than those made by contractor to proceed to collect difference.

BIDS ASKED FOR

STATE	CITY	RECEIVED UNTIL	NATURE OF WORK	ADDRESS INQUIRIES TO
STREET IMPROVEMENTS				
Massachusetts..	Boston.....	Nov. 21, noon.....	Bldg. macadam roadway, also art. stone walks on 3 sts., E. Bos.	Louis K. Rourke, Supt. of Streets.
New York.....	Yonkers.....	Nov. 21, 3 p.m.....	Widening, re-regulating, and paving Warburton ave., 7 ft. wide.	James V. Mahony, Sec'y. Bd. C. & S.
New York.....	New York.....	Nov. 22, 11 a.m.....	Asphalt paving, 4,897 sq. yds., Beck and E. 162d sts.; asphalt block, 5,155 sq. yds., E. 178th st. and Longfellow av.; repave with redressed granite block 18,250 sq. yds., South blvd.; grade, curb, etc.	Cyrus C. Miller, Pres. Bronx Boro. Sec'y. Board of Public Works.
Washington....	Everett.....	Nov. 23, 8 p.m.....	Improving Hoyt ave., from California to 21st st.	Jas. A. Berry, Pres. Shade Tree Comm.
New Jersey....	Newark.....	Nov. 25, 2 p.m.....	Lay art. stone sidewalk and coping at Military and Rector parks	C. W. Fassett, City Clerk.
Texas.....	El Paso.....	Nov. 25.....	Paving West Missouri and Gladstone sts.; \$100 check with each	
Georgia.....	Savannah....	Dec. 5, noon.....	Bldg. subway on Henry st., at A.C.L.R.R. crossing; 5,600 cu. yds. earth excav.; 6,150 lin. ft. piles in place; 800 cu. yds. concrete in place, 700 sq. yds. sidewalks, 280 lin. ft. railing.	Harry Willink, Dir. Pub. Works.
SEWERAGE				
New York.....	Kingston.....	Nov. 18, 7:30 p.m....	Bldg. sanitary sewer in portion of Smith ave., near W. S. R. R.	John T. Cummings, City Clerk.
New Jersey....	Perth Amboy...	Nov. 21, 8:30 p.m....	Bldg. 2,000 ft. 6-in. house con. for sanitary sewer, also water.	S. J. Mason, City Surveyor.
Massachusetts..	Boston.....	Nov. 21, noon.....	Bldg. pipe sewers in Edgewater Drive, Dorchester; also drains, West Roxbury.	Louis K. Rourke, Supt. of Streets.
New York.....	New York.....	Nov. 22.....	Constructing a sewer in Seneca ave.; \$4,000 security.	J. D. Trammell, City Engineer.
Texas.....	Fort Worth....	Nov. 22, 9 a.m.....	Bldg. 2.5 miles 30 to 36-in. vit. pipe sanitary sewer mains, etc.	
WATER SUPPLY				
New Jersey....	Perth Amboy...	Nov. 21, 8:30 p.m....	Bldg. con. with water mains in Sheridan st. & Davidson ave.	S. J. Mason, City Surveyor.
Minnesota.....	Duluth.....	Nov. 21, 10 a.m.....	Repairing the inlet pipe at Lakewood.	L. N. Case, Manager, Water Bd.
Mississippi....	Brookhaven....	Nov. 22.....	Compound condensing high-speed, 200 rev. per min. Corliss valve type engine for dir.-con. to 200 KW. alternator, steam consumption for operating $\frac{1}{2}$, $\frac{3}{4}$, 1 and $1\frac{1}{2}$ loads at 90% Eff., 24-in. vacuum, 140 lbs. steam.	Chester Byrne, City Clerk.
Ontario, Can...	Toronto.....	Nov. 22, noon.....	Furn. and install 10 and 15-ton hand-oper. trav. cranes, 2 sta.	Mayor G. R. Geary, Chm. Bd. Con.
BRIDGES				
Texas.....	San Antonio....	Nov. 23.....	Bldg. bridge over Zarzamora Creek, W. Commerce st.	Thomas E. Ramsey, County Aud.
New York.....	New York.....	Nov. 25.....	Bldg. elevators, stairs, drainage, ornamental and electrical work for anchor piers of Queensboro bridge over East River.	Kingsley L. Martin, Bridge Comm.
California.....	San Jose.....	Nov. 26, 11 a.m.....	Bldg. concrete bridge over Guadalupe river at Lincoln ave.	County Surveyor McMillan.
Kansas.....	Haven.....	Nov. 30.....	Bldg. 2 rein. conc. bridges, total of 58 cu. yds. concrete.	E. L. Mounts, Clk. Township Trus.
Kansas.....	Plevna.....	Nov. 30.....	Bldg. rein.-concrete bridge of 23 cu. yds. concrete.	J. E. Davis, Clk. Township Trus.
MISCELLANEOUS				
Texas.....	San Antonio....	Nov. 23.....	Furnishing metal filing cases for Dist. Clerk's vault in Ct. H.	Thomas E. Ramsey, County Aud.
Washington....	Everett.....	Nov. 23, 8 p.m.....	Repairing the garbage dump.	Sec'y Board of Public Works.
Maryland.....	Baltimore....	Nov. 30.....	Bldg. office & laboratory and transf. house, Bk. Riv. S. Disp. Wk	J. Barry Mahool, Chm. Bd. Awards.

Thomaston, Ga.—City is considering bond issue for installing sewerage and water works.

South Amboy, N. J.—Citizens have voted \$100,000 bonds for construction of sewer system.

Yorkville, N. Y.—Constructing sewer system and disposal plant, all bids rejected; new bids will be asked.—W. S. Stone, Engineer; W. E. Cooper, Village President.

Springfield, O.—Citizens have defeated proposition to issue \$125,000 bonds for construction of low level sewer along Buck Creek Valley.

Fairfax, Okla.—Citizens have voted to construct sewer system.

Dallas, Tex.—Bids have been ordered by Municipal Commissioners for laying storm sewer on Commerce St. between Market and the river, preparatory to the permanent paving improvement of the street; engineer's estimate, \$2,681.

Richmond, Va.—Sanitary Engineer R. H. Messer, of the State Health Department staff, is at work on plans for sewage disposal plants to be installed in Virginia next year to lessen amount of typhoid fever.

Toppenish, Wash.—Citizens have voted \$35,000 bonds for installation of sewers.

CONTRACTS AWARDED

Newark, N. J.—Laying a 24-in. pipe 8000 ft. along Westville ave., Caldwell, and for 16,000 ft. along Bloomfield ave., Verona, to John Barbon, \$1 per ft. and \$20 each for catch basins.

Edgewood, W. Va.—Furnishing pipe for sewer system, to Henry Seabright, Wheeling; digging trenches and laying pipe, to Stringer & Springer, Elm Grove; total, \$3000.

Belleville, Ont., Can.—To Messrs. Thompson & Donahue for constructing a sewer on Pinnacle and Church sts.

BIDS RECEIVED

Trenton, N. J.—Bids received Oct. 24 by Board of Park Commissioners for construction of Sewer No. 503, Cadwallader Park: (a) Antonio De Lucia, lowest bidder, 1,555 ft. 8-in. vit. pipe, 38c.; 685 ft. 6-in., 25c.; 60 ft. 8-in. c. i. pipe, \$1.25; 1 branch, 40c.; 3 manholes, \$35; one lamphole, \$5; total, \$1,122.55; total of other bidders: Gibbs & Morgan, \$1,211.15; Giuseppe Bosceselli, \$1,364.75; Jas. McKernan, \$1,643.95, and John Hurley, \$1,887.20.—A. L. Parker, Clerk.

Dallas, Tex.—Vitrified pipe for storm sewer on Collett, Reiger and alley, between Worth and Crutcher, Dallas Home Improvement Co., \$1.15 per ft.; Dallas Lime & Gravel Co., \$1.20; Joe B. Winslett, Jr., 94c.; storm sewer, 38 in. monolithic concrete, on Swiss, Peak, Live Oak and Hawkins, John C. Underwood, \$3.78 per ft.; C.

W. Olcott, \$2.75 per ft.; George S. Vivian, \$2.60; Dallas Home Improvement Co., \$4; Dallas Lime & Gravel Co., \$2.69; F. H. Lancashire, \$3.36.

Portland, Ore.—Construction of sewers, bids received Nov. 3: Wm. Lind, 325 E. 16th st. N. Y. City, lowest bidder, \$132,005, as follows: (a) regular bids; (b) mean of all bids: 2016 ft. 30-in. circular, (a) \$4.75, (b) \$5.44; 535 ft. 32-in., (a) \$4.75, (b) \$5.72½; 668 ft. 36-in., (a) \$5, (b) \$6.17½; 1280 ft. 43-in., (a) \$5.25, (b) \$8.46½; 2571 ft. 24x36-in., egg shape, (a) \$4.75, (b) \$5.02½; 1000 ft. 8-in. drain tile, (a) 15c., (b) 13c.; 1000 ft. 6-in., (a) 10c., (b) 9c.; 1000 ft. 4-in., (a) 7c., (b) 7c.

508 ft. 24-in. cement s.p., (a) \$2, (b) \$2.02; 1,426 ft. 22-in., (a) \$2, (b) \$1.81; 496 ft. 20-in., (a) \$1.75, (b) \$1.55; 1652 ft. 18-in., (a) \$1.50, (b) \$1.32; 940 ft. 16-in., (a) \$1.25, (b) \$1.10; 1,050 ft. 14-in., (a) \$1; (b) 89c.; 2,788 ft. 12-in., (a) 75c., (b) 67c.; 7868 ft. 10-in., (a) 60c., (b) 53c.; 18,760 ft. 8-in., (a) 45c., (b) 40c.; 28,228 ft. 6-in., (a) 30c., (b) 27½c. 69 6x6 ys. cement s.p., (a) \$1.20, (b) \$1.13; 691 8x6 ys., (a) \$1.40, (b) \$1.56; 267 10x6 ys., (a) \$2, (b) \$2.13; 70 12x6 ys., (a) \$3, (b) \$2.78; 18 14x6 ys., (a) \$4, (b) \$3.63; 15 16x6 ys., (a) \$5, (b) \$4.55; 29 18x6 ys., (a) \$5.50, (b) \$5.40; 12 20x6 ys., (a) \$6.50, (b) \$6.59; 40 22x6 ys., (a) \$7, (b) \$7.28; 6 24x6 ys., (a) \$8, (b) \$8.63.

1212 ¼ bends 6-in., (a) 75c., (b) 84c.; 46 lampholes or ventilators, (a) 15, (b) \$15.13; 84 concrete manholes complete, mixture 1-3-5, (a) \$50, (b) \$48.75; 19 deep manholes complete (a) \$75, (b) 62.50; 69,972 cu. yds. excavation and refilling, (a) 60c., (b) 65c.; 211 concrete inlets complete, (a) \$25, (b) \$21.38 each; 100 cu. yds. concrete mixture 1-2-4, (a) \$13, (b) \$11.50; 100 cu. yds. concrete mixture 1-3-5, (a) \$12, (b) \$10; 1000 vitrified brick in place, (a) \$50, (b) \$51.25 per 1000; 100 lbs. steel for extra reinforcement, (a) 10c., (b) 8c. per lb.; 1050 lin. ft. platform to be placed on piling, (a) \$1, (b) \$1.63; 170 lin. ft. tunnel, including exc. and timber, (a) \$7, (b) \$13.50; 8480 lin. ft. piling, left in place, (a) 24c., (b) 27c.; 1272 lin. ft. piling above cut-off, (a) 24c., (b) 19c. Trench in depth varies from 7 to 20 ft.; average about 12½ ft.; clay material to be excavated. No pavement to be removed. Totals of other bidders: Jeffery & Butten, Failing Bldg., Portland, \$132,735; Paquet Giebisch & Joplin, Labbe Bldg., Portland, \$140,523; K. G. Lundstrom, Worcester Bldg., Portland, \$155,739.

WATER SUPPLY

Thomaston, Ga.—Council has made contract with Perry Andrews, Atlanta, to bore well for the purpose of securing water supply; plan of boring a well, if successful, will mean a saving of approximately \$10,000 in the installation of system.

McPherson, Kan.—Citizens have voted \$3,000 bonds for water plant.

York, Neb.—Citizens will vote Dec. 27 on \$55,000 bonds for municipal water plant.

East Palestine, O.—Citizens have voted \$5,500 bonds for water works improvements.

Cincinnati, O.—Water Works Superintendent Laidlaw has completed estimate of cost of installing city water into six suburban places which voted for annexation at the last election; necessary changes at College Hill, \$5,000; distribution system in Mount Airy, \$20,000, and in Saylor Park, \$15,000; laying the mains to Carthage, \$80,000, and to Madisonville, \$40,000. Both connecting mains and distribution system will have to be installed to take care of Mount Washington; former system will cost \$30,000 and latter \$15,000.

Portsmouth, O.—Citizens have voted \$300,000 bonds for construction of water works.

Fairfax, Okla.—Citizens have voted to construct water works.

Okmulgee, Okla.—Citizens have voted bonds for water works and creek improvements.

Coraopolis, Pa.—Citizens have voted bonds for improvements of water works, electric light plant and streets.

Huron, S. D.—Citizens have voted \$40,000 bonds for construction of water plant.

Wartham, Tex.—Citizens have voted bonds for water works system.

Christiansburg, Va.—Bids will be received Dec. 6 for \$40,000 water bonds.—E. S. Hagan, Mayor.

Spokane, Wash.—Fire and Water Committees considering \$35,000 appropriation for improvements; pumping plant and mains will cost \$27,081.

St. Stephens, B. C., Can.—Bids will be received Nov. 30 for \$25,000 water works bonds.—J. Vroom, Town Clerk.

CONTRACTS AWARDED

Cincinnati, O.—Laying water mains in Ferguson and Leck Rim roads, to Gradison Construction Co., \$3,693.50.

LIGHTING AND POWER

McPherson, Kan.—Citizens have voted \$7,000 bonds for light plant.

East Newark, N. J.—Towns of East Newark, Harrison and Kearny are considering erection of joint municipal electric lighting plant.—P. J. Goodman, Town Clerk of Harrison, is interested.

Coraopolis, Pa.—Citizens have voted bonds for improvement of electric light plant.

Highmore, S. D.—T. J. Wixson, Stella, Neb., has asked for franchise to install electric light system.

Bridgeport, Tex.—Council has granted franchise to North Texas Gas Co.

Stoughton, Wis.—Council has turned down petition of Main st. merchants for

ornamental street lighting; installing the system would cost about \$18,000.

CONTRACTS AWARDED

Seneca Falls, N. Y.—Five-year contract with Geneva Electric Co., \$6,800 per year, for lighting village. Company will erect 21 ornamental poles along Fall st.

Berea, O.—Installing switchboard in municipal lighting and power plant to Youngstown Armature & Construction Co.

Springfield, O.—Council has granted renewal of street lighting contract to Springfield Gas Co., from Jan. 1, 1911, until May 14, 1914, date on which the natural gas franchise and contract expires.

FIRE EQUIPMENT

Oakland, Cal.—Police and Fire Commissioners have recommended to Council passage of ordinance authorizing purchase of three motor-propelled combination chemical and hose wagons, at cost \$15,750; motor-propelled pumping engine, to cost \$9,500; two steam fire engines to cost \$12,000; two combination chemical and hose wagons, to cost \$4,500, and fire hose to cost \$10,000.

Perry, N. Y.—Site will soon be purchased for erection of \$30,000 fire station.

Cranston, R. I.—Volunteer Fire Engine Co., No. 1, has completed plans for erection of fire station at corner of Cranston and Byron sts.; cost, \$10,000.

CONTRACT AWARDED

Billings, Mont.—To Gagnon & Co., to construct fire station, \$13,708; other bidders: Piper Construction Co., \$13,755; R. J. Lord, \$13,759; R. R. Crowe, \$15,349; V. W. Eames, \$14,800, and H. Wickerhorse, \$14,013.50.

BRIDGES

Santa Ana, Cal.—Council has approved specifications for bridge on West Fifth st.

Brunswick, Ga.—Board of Trade is urging erection of bridge over Altamaha River.

Newark, N. J.—Concurring in recommendations of joint Bridge Committee, Board of Freeholders has instructed County Engineer Owen to prepare plans for the proposed bridge over Passaic River at Bridge st.

Wilkes-Barre, Pa.—Grand Jury has recommended erection of 42 bridges at cost of \$20,850; seven concrete bridges, \$4,250; seven stone arch bridges, \$4,150, and three iron bridges, \$2,750.

Spokane, Wash.—Council has approved plans of erection of \$425,000 concrete bridge over Hangman Creek.—Morton Macartney, City Engineer.

Tacoma, Wash.—City is considering \$400,000 expenditure for erection of another drawbridge on Eleventh st. over city waterway.

CONTRACTS AWARDED.

Hyde Park, Mass.—Construction of reinforced concrete foot bridge, 84 ft. long and 8 ft. wide, across Neponset River, to John Zedren, 935 Hyde Park ave., \$1,345.—Clarance G. Norris, Town Engineer.

Wheeling, W. Va.—By Board of Control to Independent Bridge Co., \$8,735; only other bidder, Portland Concrete Co., \$9,000.

MISCELLANEOUS

Birmingham, Ala.—Committee, P. J. Rogers, Chairman, will make tour of northern and western cities to investigate crematory plans.

Washington, Ia.—Citizens have voted to erect hospital.

Portland, Me.—Plans have been prepared by Architects Geo. Burnham and E. L. Higgins for erection of proposed police station.—Chas. A. Stout, Mayor.

Aitkin, Minn.—County has defeated proposition to erect new jail.

St. Paul, Minn.—Health Commissioner of Minneapolis has urged members of the Garbage Disposal Commission, St. Paul, to take steps towards erection of municipal garbage plant.

Kearny, N. J.—Council has decided to issue \$25,000 bonds for public playground.

Cleveland, O.—Director Lea has approved plans by Architect M. M. Glerchman for proposed Edgewater bath house.

PROPOSALS

AUTOMOBILE FIRE WAGON

Helena, Mont.

Bids will be received by the City Clerk of the City of Helena, Montana, for one 80-horsepower combination automobile fire wagon, capable of carrying 2000 feet of hose and one 35-gallon chemical tank. Bidders must supply with their bids full information as to specifications upon which bid is submitted, also cost of extras generally needed for repairs. There should also be included information as to standardization of these parts.

Bids will be received up to 8 P. M., December 17th, 1910.

The City Council reserves the right to reject any or all bids.

By order of City Council.

J. A. MATTSON,
City Clerk.

REPAIRING INLET PIPE

Duluth, Minn.

Bids will be received by the Board of Water and Light Commissioners, Monday, the 21st inst., at 10 A. M., for repairing the inlet pipe at Lakewood.

Specifications of the work can be had of the Manager.

A surety bond as provided by the charter will be required for the correct performance of the work.

L. N. CASE,
Manager.

WATER WORKS

Brookville, Pa.

Sealed proposals will be received by the Brookville Water Company until 6 P. M., November 19, 1910, for the furnishing of material and construction a dam and reinforced concrete settling basins. Approximate quantities:

2,150 yds. Earth excavation.

30 yds. Rock excavation.

1,510 yds. Embankment.

490 yds. Rubble concrete.

526 yds. Reinforced concrete.

208 yds. Plain concrete.

340 sq. yds. Slope paving.

230 ft. of 12-in. Cast-iron pipe.

Each proposal must be accompanied by a certified check for \$500, payable to the Secretary, and a bond of ten thousand dollars (\$10,000) will be required of the successful bidder. Work to be commenced as soon as possible. Plans and specifications may be obtained by application to the Secretary.

The right to reject any or all bids is reserved.

GEORGE W. HEBER,
Secretary.

PUMPS

OFFICE OF BOARD OF CONTROL

Norfolk, Va.

Sealed proposals will be received at the office of the Board of Control, Norfolk, Va., until 12:30 o'clock P. M., November 19th, 1910, for the design, furnishing and installing three electrically driven centrifugal pumps, at Colley Ave. Sewer Pumping Station.

One 2,000 gallons per minute pump.

One 3,000 gallons per minute pump.

One 4,000 gallons per minute pump.

Instructions to bidders and specifications may be obtained upon application to the City Engineer.

The right to reject any or all bids is reserved.

THE BOARD OF CONTROL.
W. T. BROOKE, City Engineer.

FURNISHING FIRE HOSE

Office of Board of Fire Commissioners,

City of Duluth, Minn., Nov. 2, 1910.

Sealed bids will be received by the Board of Fire Commissioners in and for the corporation of the City of Duluth, Minnesota, at their office in said city, Room 31, City Hall, up to and including Friday, the 25th day of November, A. D. 1910, at 3 o'clock p. m., for furnishing the City of Duluth with two thousand (2,000) feet of steam fire engine hose, 2½ inches internal diameter, fitted with brass automatic screw couplings and Higbee patent threaded. Hose to be delivered at Fire Headquarters, freight paid. A certified check for 10 per cent of the amount bid, payable to the order of the Treasurer of the City of Duluth, must accompany each proposal, as a guarantee that if any such bid is accepted the bidder will enter into a valid contract with the City of Duluth in accordance with the terms of such bid. The board reserves the right to reject any and all bids.

BOARD OF FIRE COMMISSIONERS,

By JOHN McCALL,
Secretary.

D. H., Nov. 2, 3 and 4, 1910. D 218.

ELECTRIC LIGHT BONDS

Coleman, Tex.

The City of Coleman, Tex., now has ready for delivery \$20,000 worth of electric light improvement bonds, dated July 1, 1910, 5-40s, bearing 5 per cent interest; interest payable semi-annually. Write for financial statement and other particulars to

F. A. DIBRELL, City Secretary,
Coleman, Tex.

NEW INCORPORATIONS

Buffalo Contractors' Equipment Co., Buffalo, N. Y.; manufacture and deal in contractors' supplies, etc.; capital, \$5000. Incorporators: James M. Carter, Wm. M. Hind, Ward H. McPherson, Buffalo, N. Y.

The Central Engineering & Construction Co., Indianapolis, Ind.; to construct roads, streets and buildings. Incorporators: Edward L. Powers, Martin W. Addy and E. M. Powers are directors.

Greenhill Water Company, Altoona, Pa.; capital, \$5000.

Kulpmont Water Company, Mount Carmel township, Pa.; capital, \$25,000.

Reliance Water Company, West Telford, Montgomery County, Pa.; capital, \$5000.

The Rennselaer Valve Company, Troy, N. Y.; capital, \$500,000; to manufacture valves, hydrants, brass castings and foundry products. Incorporators: Messrs. Rowe and Irving, Troy, N. Y., and Thos. Breslin, Waterford, N. Y.

The Spokane Corrugated Culvert & Tank Company, Spokane, Wash.; capital, \$20,000. The company will erect a plant for the manufacture of sheet metal products. Incorporators: John S. Beall and C. A. Foster of Portland, and H. G. Harrison of Spokane.

Telford Water Company, West Telford, Pa.; capital, \$5000.

RAY S. BLINN

Consulting Engineer
Mount Vernon, Ohio

(Formerly engineer in charge of paving, Columbus, Ohio.)

Will attend lettings for contractors to assist preparing bids or estimates. Expert in court cases. Twenty years' experience in construction. Fees reasonable.

BETTER GOODS FOR LESS MONEY



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WATER WORKS
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